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THE JOURNAL

OF THE

American Medical Association

Subscription, $8.00 | PUBLISHED WEEKLY | Single Copies, 25 Cents

VOLUME 112, No. 22

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535 North Dearborn Street, Chicago, Ill.

JUNE 3, 1939

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THE JOURNAL of the American Medical Association is published weekly by the American Medical Association, 535 North Dearborn Street, Chicago, Ill. Subscription price, $8.00 a year. 25c a copy. Canadian $9.50. Foreign $12.00. Entered as second class matter June 25, 1885, at the Postoffice at Chicago, Ill., under Act of March 3, 1879.

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The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 112, No. 22 — COPYRIGHT, 1939, BY AMERICAN MEDICAL ASSOCIATION — CHICAGO, ILLINOIS — JUNE 3, 1939

BURNS IN CHILDREN

A METHOD OF TREATMENT AND ITS RATIONALE

HARRY M. BLACKFIELD, M.D.

AND

LEON GOLDMAN, M.D.

SAN FRANCISCO

The knowledge gained from clinical and experimental observations during recent years has caused us to change our conception of the subject of burns. Not satisfied with all the aspects of existent therapy, we have adopted some and revised other features of prevalent methods in order to combat the manifold effects of an extensive burn. We have combined the tannic acid, silver nitrate and gentian violet methods of local treatment, because this combination complies with our understanding of the subject and, in our opinion, produces the best results in the many children treated for burns at the San Francisco city and county and the University of California hospitals.

Statistics reveal startling facts concerning burns in children. In the United States approximately 40 per cent of all deaths from burns occur in children under 15 years of age, and 75 per cent of these deaths occur in children under 5 years. Stoves, grates, hot water, steam and matches are the chief agencies of injury. In children under 5, scalds head the list of fatal burns, most of them occasioned by the propensity of young children to pull containers of hot liquids from stoves or tables. The fault lies with the adult who negligently permits these agents of death to be placed within the reach of a child.

The mortality from burns as a whole has decreased more than 60 per cent during the past twenty years, as shown in the accompanying table. The actual number of serious burns in homes has declined for various reasons, among them the diminishing use of the coal stove, the replacement of gas burners and oil lamps by electricity and the education of adults by safety workers. The medical profession has done its share in reducing the number of fatalities by the introduction of newer methods for the treatment of burns.

Our experience has convinced us that the prognosis for all burned children should be guarded. We wish to emphasize also that one cannot foretell, from the size of the burn, what degree of toxicity may follow (fig. 1). The chemical equilibrium is so easily disturbed in children, with changes in the volume of the blood and the osmotic pressure resulting from increased capillary permeability, that their narrow reserves may be depleted if not safeguarded early. Shock invariably is present in children with diffuse burns. The necessity for prompt hospitalization of such children therefore is evident.

Not long ago the hypothesis of the absorption of decomposed proteins was upheld by many authorities as the explanation of all the symptoms which occurred during the different phases following burns. As a result of subsequent experimental work, however, it is known that the clinical course of a patient with a severe burn represents a procession of several intermingling phases which cannot be explained on the basis of any one theory.

PRIMARY PHASE: TRAUMATIC SHOCK

In children, burns involving only a small area may be associated with shock, while extensive burns always are followed by this phenomenon. Such shock presents the identical clinical picture of traumatic or surgical shock and is characterized by loss of body heat, cold moist skin, rapid pulse and fall in blood pressure. This phase usually is transient but may be prolonged or even become fatal if not recognized and treated properly.

SECONDARY PHASE: CONCENTRATION OF BLOOD

Underhill and his co-workers [1] had the opportunity of studying twenty-one patients who were burned in a theater and found that, within a few hours, their blood became greatly concentrated. The hemoglobin content of the seriously burned patients was elevated to as high as 209 per cent. These authors concluded that when a hemoglobin content of 125 per cent is reached and sustained the maintenance of life becomes precarious and that a sustained hemoglobin content of 140 per cent is fatal.

The concentration, they pointed out, would so interfere with the functioning of the blood that it would produce failing circulation, inefficient carrying of oxygen with consequent oxygen starvation of the tissues, a fall of temperature and, finally, suspension of vital activities. They further showed that this stage may not reach its peak until thirty-six hours after the burn and may explain the early death of patients who survive the initial period of shock. Underhill, Kapsinow and Fisk [2] found that concomitantly with this change the nonprotein nitrogen level of the blood

From the University of California Surgical Service at the San Francisco Hospital, Division of the San Francisco Department of Public Health, and from the Department of Surgery, University of California Medical School.

1. Underhill, F. P.; Carrington, G. L.; Kapsinow, Robert, and Pact, G. T.: Blood Concentration Changes in Extensive Superficial Burns and Their Significance for Systemic Treatment, Arch. Int. Med. **32**: 31 (July) 1923.

2. Underhill, F. P.; Kapsinow, Robert, and Fisk, W. E.: Studies on the Mechanism of Water Exchange in the Animal Organism, Am. J. Physiology **95**: 302, 315, 325, 334 and 339 (Nov.) 1930.

was elevated and the level of blood chlorides was lowered; they concluded that the degree of concentration of the blood is an index of the patient's condition. In their opinion, this phenomenon explains the great part of the picture during the first twenty-four to thirty-six hours. These conclusions were also reached by Blalock [3] and Beard and Blalock [4] by experimental means. By the forcing of fluids during this period, the volume of the blood, as well as the cardiac function, is brought to normal. Recognition of this phase of the clinical picture, with suitable treatment, has helped greatly to lessen the early mortality in our cases of severe burns.

In spite of adequate treatment for shock and the concentration of the blood, and despite lack of evidence of infection under the eschar, occasionally a patient's condition may become critical during the first three or four days after a burn. In an attempt to explain deaths during this phase, Underhill showed experimentally that the intraperitoneal temperature may rise to 110 F. in animals with diffuse burns of the trunk. He felt that this penetration of heat to the abdominal cavity might play a significant part in the production of the pathologic appearance of the viscera usually attributed to toxemia from the burned area.

Because clinical, pathologic and experimental conditions occasionally simulate insufficiency of the adrenal cortex, Wilson, Rowley and Gray [5] suggested the use of adrenal cortex extract. They cited the cases of two critically ill children who they felt had been definitely benefited by this therapy.

Fig. 1.—Third degree scald in a child 14 months of age, involving only 7 per cent of the surface of the body. He was treated by the tannic acid method. There was a moderately severe febrile reaction, with severe toxemia during the first week, although only a small area was involved. The child experienced convulsions, drowsiness and oliguria, but the urinary sediment was constantly normal.

It is evident that considerable doubt exists as to the cause of death in the small percentage of well treated patients with either slight or extensive burns who die in the first seventy-two to ninety-six hours.

3. Blalock, Alfred: Experimental Shock: VII. The Importance of the Local Loss of Fluid in the Production of the Low Blood Pressure After Burns, Arch. Surg. **22**: 610 (April) 1931.

4. Beard, J. W., and Blalock, Alfred: Experimental Shock: VIII. The Composition of the Fluid Which Escapes from the Blood Stream After Mild Trauma to an Extremity, After Trauma to Intestines and After Burns, Arch. Surg. **22**: 617 (April) 1931.

5. Wilson, W. C.; Rowley, G. D., and Gray, N. A.: The Acute Toxemia of Burns, Lancet **1**: 1400 (June 20) 1936.

TERTIARY PHASE: TOXEMIA

There are two main hypotheses to be considered in attempting to explain the deaths which occur later. The older presupposed that there was some substance liberated from the burned area which made its way into the blood stream and produced the toxemia. Different authors have described a variety of split proteins as the causative agents of this toxic reaction.

Fig. 2.—Third degree gasoline burn involving 45 per cent of the surface of the body in a boy 12 years of age. Shock, concentration of the blood and hypochloremia occurred. Septic toxemia from large infected granulating areas caused a marked elevation of temperature and pulse rate. Urinalysis showed nothing abnormal except the faintest possible trace of albumin. After the use of azochloramid dressings and daily baths the infection subsided. A steplike improvement followed each grafting of skin. Small deep grafts were used. Several transfusions were necessary.

Robertson and Boyd [6] burned the skin of rabbits. The burned skin was removed and grafted on unburned rabbits, and toxemia was said to have developed in the unburned rabbits, while control animals showed no change. The futility of attempting to graft burned skin from one animal to another is obvious to one familiar with dermal transplantations. Harrison and Blalock [7] repeated this work but were unable to produce signs of toxemia. Robertson and Boyd injected an extract of burned skin into guinea pigs and claimed to have produced a toxic syndrome which corresponded exactly to that seen in a burned patient. Kapsinow [8] repeated this work and found that the alcoholic content of the extract was sufficient to cause the symptoms in the animal, casting doubt on the theory that primary and secondary proteoses are present and produce toxemia, as advocated by Robertson and Boyd. He was unable to produce toxicity by injecting blood from burned patients into animals and performed other experiments to show that this idea was not tenable.

Averages of Annual Death Rates from Burns per Hundred Thousand (Conflagrations Excepted), with a Comparison of the Years 1911-1915 with the Years 1931-1935 (from the Metropolitan Life Insurance Company)

	White				Negro				Percentage Change 1931-1935 Since 1911-1915			
	Males		Females		Males		Females		White		Negro	
Age, Yrs.	1931 to 1935	1911 to 1915	1931 to 1935	1911 to 1915	1931 to 1935	1911 to 1915	1931 to 1935	1911 to 1915	Males	Females	Males	Females
1-74	3.1	6.8	3.3	9.6	5.3	11.4	7.1	18.6	−54.4	−65.6	−53.5	−61.8
1- 4	11.7	43.5	13.9	39.3	16.1	73.3	22.6	76.3	−73.1	−64.6	−78.0	−70.4
5- 9	1.9	7.0	4.3	12.7	2.9	10.2	10.3	30.1	−72.9	−66.1	−71.6	−65.8
10-14	1.0	1.3	1.0	3.9	0.5	2.3	3.6	7.9	−23.1	−74.4	−78.3	−54.4
15-19	1.1	0.9	0.6	2.8	0.6	2.6	1.3	6.4	+22.2	−78.6	−76.9	−79.7
20-24	1.5	1.5	1.3	3.6	2.8	2.7	1.4	8.0	....	−63.9	+ 3.7	−82.5
25-34	2.1	1.7	1.1	3.6	4.1	3.6	2.7	5.5	+23.5	−69.4	+13.9	−50.9
35-44	2.6	3.3	1.6	5.0	3.1	4.5	3.0	7.2	−21.2	−68.0	−31.1	−58.3
45-54	2.9	3.3	2.4	7.9	5.6	4.4	7.5	13.7	−12.1	−69.6	+27.3	−45.3
55-64	4.0	5.2	4.9	10.7	8.5	6.1	13.4	17.5	−23.1	−55.1	+39.3	−23.4
65-74	7.7	8.2	10.4	24.5	28.3	20.8	24.8	46.9	− 6.1	−57.6	+36.1	−47.1

6. Robertson, Bruce, and Boyd, G. L.: The Toxemia of Severe Superficial Burns, J. Lab. & Clin. Med. **9**: 1 (Oct.) 1923; Toxemia of Severe Superficial Burns in Children, Am. J. Dis. Child. **25**: 163 (Feb.) 1923.

7. Harrison, W. G., and Blalock, Alfred: A Study of the Cause of Death Following Burns, Ann. Surg. **96**: 36 (July) 1932.

8. Kapsinow, Robert: Toxin of Extensive Superficial Burns, New Orleans M. & S. J. **85**: 195 (Sept.) 1932.

In 1924 Davidson,[9] working on the hypothesis that the toxemia of burns resulted from the absorption of broken down proteins from the site of the burn, introduced the use of tannic acid to coagulate the burned tissue and prevent toxic absorption. Working on the same hypothesis, Bettman[10] modified this method by applying silver nitrate, after an initial application of tannic acid, to shorten the period of the formation of the eschar and, by so doing, to prevent the absorption of the supposed split protein material.

In 1930 Underhill and his co-workers proved experimentally by injection of dyes and lethal doses of strychnine into the burned areas that no absorption from these areas occurred within the first twenty-four to thirty-six hours. They proved that instead fluids entered the burned tissue from the blood stream because of increased permeability of the capillaries. Reabsorption of this edema fluid then proceeded slowly for from five to six days. These authors felt that the early toxic symptoms resulted from dehydration, increased concentration of the blood and loss of blood chlorides and serum protein and concluded that an elevation of temperature after the first twenty-four to thirty-six hours is not the result of any absorption of decomposed protein from the burned areas but is caused by infection.

Aldrich[11] in 1933 proved to his satisfaction that the so-called toxemia which occurs from twelve to thirty-six hours after the burn is the result of infection. By extensive bacteriologic studies he found that after the first period of twelve hours material from 10 per cent of the severely burned areas yielded positive cultures with beta hemolytic or gamma streptococci as the predominating organism. This was also true of the large majority of minor burns. With obvious signs of sepsis, the concentration of these organisms increased until, after from forty-eight to fifty-six hours, pure cultures of streptococci could be obtained. In fatal cases, cultures of the blood showed streptococci and examination of the viscera showed evidence compatible with acute infection or sepsis. Aldrich introduced the use of a 1 per cent aqueous solution of gentian violet because of its bactericidal and bacteriostatic effect on gram-positive cocci as well as its escharotic value. He recognized the good results of the use of tannic acid but felt that they were due to the sealing off of the burn by a sterile eschar, with consequent prevention of infection, rather than to the lessening of absorption of broken down proteins. Recently Aldrich advocated the use of brilliant green with acriviolet (a mixture of acriflavine with gentian violet) because of its superior bactericidal and bacteriostatic properties.

Fig. 3.—The method of removing a large graft from a small child. This is impossible in many cases unless the Blair suction retractor is used.

Fig. 4.—The patient shown in figure 2 eighteen months after the burn, showing healing by means of small deep grafts.

These clinical and experimental conclusions have been fortified by our observations and experiences and have stimulated changes in our therapy from time to time. At different periods we have stressed first one method and then another. The method to be described has been followed long enough to prove its value if it is carried out properly. In general it is planned to meet the successive phases of burns and their complications as they occur.

EARLY THERAPY

We always employ special nurses in the early period.

Shock.—No local therapy is instituted until this initial phase is corrected. The condition is combated by the usual means of heat, sedatives, fluids administered parenterally and transfusions of blood. A transfusion is always given to a patient with severe burns during the first few hours, even if he appears to be in excellent condition.

Tannic Acid Bath.—After the successful alleviation of shock, local therapy is started. For some time we used the tannic acid spray method. It was given up because many hours were required for the formation of the eschar, the patient was kept moist for too long a time and the method was difficult to use for burns which covered the dorsal as well as the ventral surfaces of the body.

Tannic acid jellies, although excellent for emergency dressings, usually require two or three applications for the formation of an eschar, over a period of from twenty-four to seventy-two hours. Frequently, with the change of dressings, portions of the eschar are pulled away, allowing infection to enter.

9. Davidson, C. E.: Tannic Acid in the Treatment of Burns, Surg., Gynec. & Obst. **41**: 202 (Aug.) 1925.
10. Bettman, A. G.: Tannic Acid and Silver Nitrate Treatment in Burns, Surg., Gynec. & Obst. **62**: 458 (Feb. 15) 1936.
11. Aldrich, R. H.: The Role of Infection in Burns, New England M. J. **208**: 299 (Feb. 9) 1933.

We now favor the use of the tannic acid bath as described by Wells.[12] It helps to combat shock, facilitates débridement and starts formation of the eschar. Enough tannic acid powder is placed in a warm bath (from 90 to 100 F.) to give a muddy color. After an initial burning sensation of short duration, the patient usually relaxes completely in the tub. All blebs, previously applied unguents and loose necrotic tissue are removed gently by means of sterile forceps and scissors. The surrounding skin is cleansed with gauze soaked in green soap and water. During the débridement and cleansing of the burned area, which usually last from sixty to ninety minutes, the bath is changed two or three times as necessary to dispose of the débris.

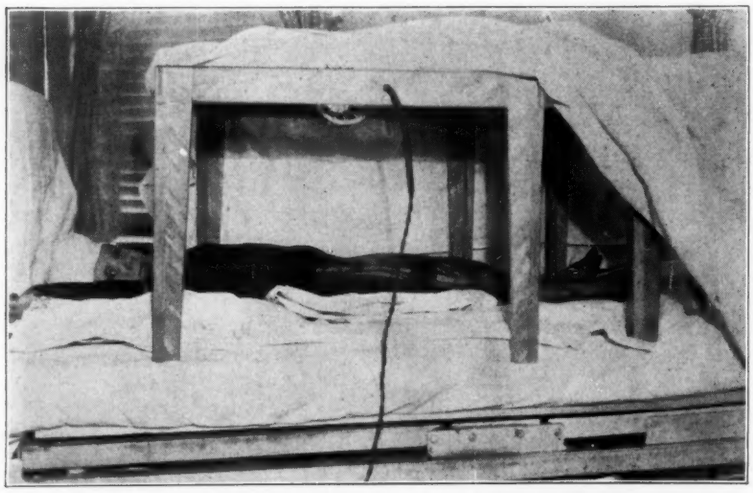

Fig. 5.—H. S., a girl 7 years of age, with 20 per cent of the body involved by second and third degree burns, immediately after tanning. Shock, concentration of blood and hypochloremia occurred. She was treated by the tannic acid bath, silver nitrate and gentian violet method.

Although treatment by the production of an eschar was introduced in 1925, we still see many severely burned patients treated by means of unguents. We emphatically condemn their use in cases of severe burns. This is the one type of initial treatment which may interfere with modern therapy. If there is any suspicion that the burn may be extensive or deep and no escharotic preparations are available, it is far wiser to wrap the patient in clean linen and rush him to an institution where proper therapy can be carried out than to treat him with unguents.

Mentioned only to be condemned is vigorous débridement of burns or excision of the burned area with the patient under anesthesia. These methods, in our hands, have tended to induce or aggravate shock. We place exsanguination followed by transfusions in the same category. These procedures are too radical.

Silver Nitrate.—After satisfactory débridement, the patient is dried with sterile towels. Gauze soaked in 10 per cent solution of silver nitrate is then applied by blotting it on the burned area. An immediate tan is produced. This saves from twelve to seventy-two hours, required for the production of a tan by other methods, and seals the burned area long before infection can take hold. The element of time is extremely important, as the treatment of a burn should conform to the general surgical principle that an open wound must be closed within six or eight hours if it is to be considered free from contamination. No cases of poisoning from the absorption of silver have been encountered, the reason probably being that little absorption occurs from the burned areas at this time.

The patient is then placed on a sterile sheet, pressure being kept off the burned areas. Particular emphasis is laid on the fact that the burn should be treated as a sterile surgical wound. If every precaution is not taken, the eschar will soon show varying degrees of infection. A large cradle is placed over the child to keep the bed clothes away from the burn (fig. 5). The temperature of the tent is usually kept around 85 or 90 F. in order to keep the patient comfortably warm and the eschar from becoming moist.

Gentian Violet.—The entire burned area, including its edges, is treated with a 1 per cent aqueous solution of gentian violet applied with sterile gauze pledgets several times a day for the first few days. In this manner the surface of the burn and the surrounding skin are kept free from organisms. It is important to give this treatment three or four times a day in order to keep dry small fissures or other areas which might otherwise become moist as a result of pressure, motion or perspiration (fig. 2).

With deep burns completely encircling the hands or fingers, the tannic acid and silver nitrate method is not used, because of the danger to the circulation by its constricting action. In this location, gentian violet alone or saline compresses should be substituted.

Prevention of Dehydration and Concentration of the Blood.—During the early phase, most patients will take fluids by mouth, but, if they are unable to do so, fluids should be administered parenterally to combat dehydration, concentration of the blood and loss of chlorides. Fluids such as fruit juices, broth and milk should be forced. For children with large burned areas, it is our policy to give transfusions during the first twenty-four hours as prophylaxis against the recurrence of shock.

Fig. 6.—H. S., three weeks after the burn, showing the remaining eschar, which is still dry and free from infection.

We do not advocate the use of continuous intravenous therapy, because of the danger of thrombophlebitis, bacteremia and septic emboli. The intake of fluids and the urinary output should be recorded carefully. If edema ensues, the quantity of fluids should be lessened. In our experience, oliguria has been the first sign of renal injury, usually occurring after a few days; in only a few cases have we been able to demonstrate casts and red blood cells in the urine except as a terminal finding.

12. Wells, D. B.: The Aseptic Tannic Acid Treatment of Diffuse Superficial Burns, J. A. M. A. **101:** 1136 (Oct. 7) 1933.

LATE THERAPY

As a rule, within seven to fourteen days the edge of the eschar starts to loosen and curl up. If the burn is no deeper than second degree, epithelium creeps in from the sides and from residual islands beneath the eschar, covering the burned area. As the eschar loosens, it is trimmed away and gentian violet is applied. If purulent material collects under a portion of the eschar,

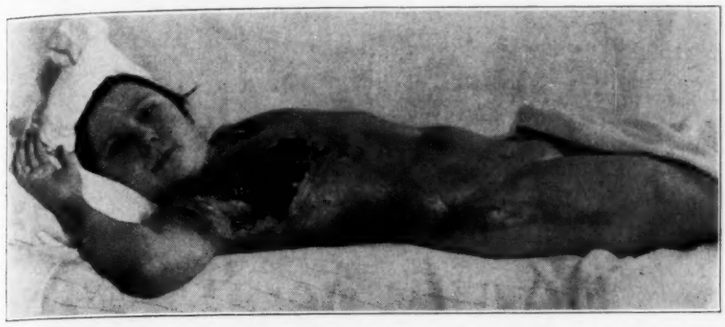

Fig. 7.—H. S.; the clean granulating surface is ready for skin grafting six and a half weeks after the burn.

the eschar is removed locally and that part of the burn is painted with gentian violet several times a day. Following this routine carefully, we have seen no spread of the infection under the eschar.

After three weeks we assume that the remaining eschar covers third or deep second degree burns and that spontaneous epithelization will not occur. This densely adherent eschar therefore is removed to allow the formation of granulation tissue. At first we applied compresses to all eschars, feeling that this was the simplest manner of removing them. Many patients, however, still had adherent eschar even after two weeks of this treatment, so, although we still remove small areas by means of compresses, for large areas we favor excision of the eschar with the patient under light anesthesia, If necessary we combat operative shock by preoperative transfusion. After the eschar is removed, the burned area is treated as a wound and the formation of granulation tissue is encouraged in preparation for the grafting of skin.

Present day advertising may mislead the inexperienced to feel that the qualities of certain products are sufficient to heal a burn during this stage. Although this may be true of minor burns, it is never true of severe burns; these always result in wounds denuded of epithelium and must be treated as such.

It is extremely important to anticipate and combat late complications such as anemia, septic toxemia and contractures. If large granulating areas are present for a long time, the patient soon presents a picture of exhaustion despite an abundant diet and transfusions. The best means of preventing such difficulties is to graft skin over all granulating areas as soon as feasible.

Preparation for grafting is carried out by means of daily tub baths, the application of saline compresses and saline jelly and the use of diluted solution of sodium hypochlorite or azochloramid. We have found the last to be of considerable value in treating large infected granulating areas. Only one dressing is required daily, and the patient usually shows an increase in appetite, requires fewer sedatives and shows an improvement in morale as compared with those who have several painful changes of dressings each day. We feel that the lives of many of our most severely burned patients have been saved by this method.

Whenever possible we recommend the covering of granulating areas by grafts of intermediate thickness, after the method of Blair and Brown [13] (fig. 3). With very large areas it may be impossible to use this type of graft because of insufficient donor skin. In such cases we use the small deep grafts of Davis [14] (fig. 4).

Patients who are recovering from severe burns do not tolerate a great deal of surgical work. For those showing exhaustion one must plan short procedures with light anesthesia, often preceded by transfusions.

In the correction of healed contractures —which frequently cannot be prevented— every attempt is made to use grafts of intermediate thickness for repair.[15] Although this type of graft has limitations, it is amazing how frequently and efficaciously it may be used, and by this method many involved extensive procedures may be avoided. We have found that only a small proportion of our patients require the use of grafts of the full thickness of the skin or pedicles of skin and subcutaneous tissue.

REPORT OF CASE

H. S., a girl aged 7 years, was admitted to the University of California Hospital Feb. 2, 1937, with severe burns over the right side of the thorax, axilla and abdomen. Immediately after the accident (8:15 p. m.) she was rushed to an emergency hospital, where a tannic acid and merthiolate jelly (amertan) was applied and a sedative given. She entered the University of California Hospital an hour later, in shock, and was wrapped in a sterile sheet and hot blankets. Having sufficiently recovered from shock by 10:30 p. m. (two and a half hours after the burn) she was placed in a tannic acid bath for about ninety minutes. During this time she was completely relaxed and free from pain. The bath was changed three times before débridement was complete.

Fig. 8.—H. S.; the burned area is entirely healed two weeks after the application of split grafts and two months after the burn.

She was dried with sterile towels and painted with a 10 per cent solution of silver nitrate followed by a 1 per cent aqueous

13. Blair, V. P., and Brown, J. B.: The Use and Uses of Large Split Skin Grafts of Intermediate Thickness, Surg., Gynec. & Obst. **49**: 82 (July) 1929.

14. Davis, J. S.: The Small Deep Graft, Ann. Surg. **89**: 902 (June) 1929; **91**: 633 (April) 1930.

15. Blair, V. P.; Brown, J. B., and Hamm, W. G.: Early Care of Burns and Repair of Their Defects, J. A. M. A. **89**: 1355 (April 16) 1932.

solution of gentian violet. Within half an hour her eschar was complete and she was placed on a sterile sheet, naked under a cradle from which was suspended an electric light bulb (fig. 5). It was computed that she had suffered second and third degree burns of 20 per cent of the total surface of the body.

During this period fluids were forced by mouth and a clysis of 500 cc. of Ringer's solution was given, as well as a transfusion of 350 cc. of whole blood. The hemoglobin content was 110 mg. and the plasma chloride content 495 mg. per hundred cubic centimeters of blood. The red blood cell count was 6,000,000. Two days later the plasma chloride content was 574 mg. Urinalysis gave consistently negative results throughout her stay in the hospital.

For the first few days her temperature and pulse rate remained somewhat elevated. Within seven days after the burn there had developed a mild secondary anemia which improved after a transfusion of blood. The eschar began to lift at the edges by the seventh day. The elevated portions were trimmed away and the adherent edges were painted with gentian violet. On the twenty-fourth day the remaining eschar (about 35 per cent) was removed with the patient under light anesthesia (fig. 6).

After the removal of the eschar, she was placed in a tub bath for two or three hours each day for nineteen days before her granulations were considered clean enough to permit the grafting of skin. After each tub bath the granulating areas were dressed with strips of fine mesh gauze, 4 by 8 inches in size, saturated with a mixture of one part of azochloramid in glyceryl triacetate (triacetin) to three parts of Peruvian balsam. We have found that one dressing of this mixture daily is adequate to prevent infection. For two days before grafting, compresses of physiologic solution of sodium chloride were applied to the area.

On the nineteenth day after the removal of the eschar, four large split grafts were removed from the left thigh by the Blair method and sewn into the defect on the thorax (fig. 7). A spica bandage of dressings, gauze roll bandages and wide adhesive tape was sufficient for immobilization. Rubber tubes were included in the dressings to allow the introduction of warm saline solution. The dressings were changed for the first time on the third day; then daily dressings were done, pressure being reapplied for seven days. The patient was discharged from the hospital March 28, eleven days after the grafting was done and fifty-five days after the burn (fig. 8). One month after discharge, the motions of the shoulder girdle were normal.

SUMMARY

1. The prognosis of severe burns in children is so uncertain that all children with such burns should be hospitalized promptly.

2. The mortality of burns has been lessened greatly because of the improved therapy now in use.

3. The use of unguents in the treatment of severe burns has been condemned.

4. The tannic acid bath, silver nitrate and gentian violet method is the treatment of choice for the early local treatment of burns.

5. A review of the literature reveals experimental and clinical evidence to suggest that infection rather than absorption of toxic products is the cause of late toxemia in cases of burns.

6. Few constitutional changes occur if infection is prevented by the early formation of a sterile eschar.

7. The early grafting of skin over granulating areas is urged for the prevention of septic toxemia and contractures.

8. The use of grafts of intermediate thickness (Blair) is recommended whenever possible.

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FRACTURES OF THE SPINE COMPLICATING METRAZOL THERAPY

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Convulsive therapy was first advanced by Ladislaus von Meduna of Budapest, Hungary. He conceived this form of therapy on the basis of reports as to the infrequency of the occurrence of both epilepsy and schizophrenia in the same individual and the fact that patients known to have schizophrenia had greatly improved or had recovered when spontaneous epileptic seizures developed. Meduna [1] said "The theoretical basis for the therapy with cardiazol lies in the assumption that a certain biochemical antagonism exists between the convulsive state and the schizophrenic process."

Meduna first experimented with animals, producing convulsions by injecting camphor. Jan. 2, 1934, he gave his first injection of a 25 per cent solution of oleum camphoratum to a patient for the purpose of producing a convulsion. He [2] found one patient in whom he could not produce a convulsion with camphor, so metrazol (cardiazol) was substituted. Cardiazol, or metrazol, is an analeptic, and these are the European and American trade names, respectively, for pentamethylentetrazol, which was synthesized by Prof. K. F. Schmidt [3] of Heidelberg, during experiments directed at the synthesis of water-soluble substances having the therapeutic properties of camphor. Meduna's [2] report on the result of cardiazol therapy with twenty-six schizophrenic patients was submitted for publication in January 1935.

The treatment was first introduced to this country by Dr. Emerick Friedman [4] of Buffalo City Hospital, who reported a series of twenty cases at the meeting of the American Psychiatric Association in May 1937. In November 1937 Kennedy [5] gave a report of 1,000 cases that had been treated throughout Europe. Several hundred cases of metrazol treatment have been reported in this country, and we have had verbal reports of at least 200 cases that have not appeared in the literature. With the rapidly increasing popularity of this form of therapy, it would seem reasonable to assume that as many as 4,000 patients have received some form of convulsive therapy.

Since Nov. 18, 1938, seventeen patients (three males, fourteen females) have received metrazol therapy at Butler Hospital. The number of convulsions produced in each case has varied from two to fifteen, with a total of 117 convulsions for the entire group. Eight of the patients treated have complained at some time of pain in the back. Such complaints have occurred most frequently after the first or second convulsion, although one patient did not complain of pain until three weeks

From Butler Hospital.

1. von Meduna, Ladislaus: The Significance of the Convulsive Reaction During the Insulin and Cardiazol Therapy of Schizophrenia, J. Nerv. & Ment. Dis. **87**: 133-139 (Feb.) 1938.

2. von Meduna, Ladislaus: Versuche über die biologische Beinflussung des Ablaufes der Schizophrenie, Ztschr. f. d. ges. Neurol. u. Psychiat. **152**: 235-262, 1935.

3. Schmidt, K. F., cited by Kennedy.[5]

4. Friedman, Emerick, cited by Walk and Mayer-Gross.[6]

5. Kennedy, Alexander: Convulsion Therapy in Schizophrenia, J. Ment. Sc. **83**: 609-629 (Nov.) 1937.

after treatment was discontinued. This symptom has varied from slight discomfort to severe pain. Several of the patients have exhibited localized tenderness to light percussion over the involved portions of the spine. Only one patient complained of severe pain, and this was of short duration. This patient also presented evidence of having difficulty in body movements and, the first for whom roentgenograms were made, presented symptoms more severe than those observed in any other patient. The roentgenograms showed compressed fracture of the eleventh and twelfth dorsal vertebrae. This was considered a rare and unfortunate occurrence, the first of its nature reported in the history of metrazol therapy. However, subsequent x-ray examinations revealed compressed fractures of the dorsal spine in all patients who had complained of backache.

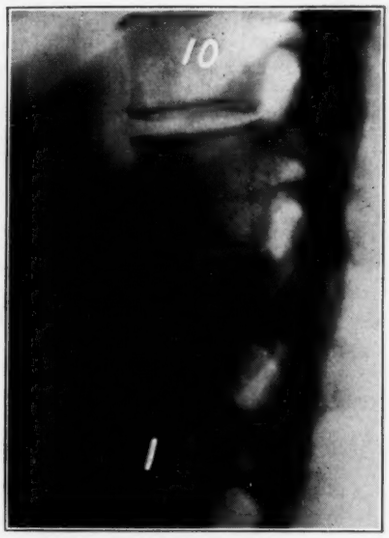

Fig. 1 (case 1).—Obvious compression fracture of the body of the twelfth dorsal vertebra, upper portion, with zone of increased density; slightly compression of the anterior inferior portion of the body of the eleventh vertebra, and slight kyphosis.

A brief report on the patients complaining of pain in the back, with a report of the x-ray examinations, will best convey the problem that is being called to the attention of those employing convulsive therapy.

REPORT OF CASES

CASE 1.—A. L., a man aged 48, who had three convulsions, the first Nov. 30 and the last Dec. 7, 1938, complained after the first convulsion of slight pain in his back, which increased after the second treatment. Immediately after the third convulsion, while still very confused, he gave evidence of experiencing severe pain. This lasted for approximately thirty minutes, with occasional attacks in decreasing frequency for three hours. At this time the pains were localized high over each lumbar region several inches from the midline. The patient refused to stay in bed after the first six hours and presented symptoms simulating lumbago. There was a subsidence of symptoms from day to day. When closely questioned, the patient spoke of transient pain in the anterior abdominal wall. It was for this reason that an x-ray examination was made December 15.

Physical and neurologic examinations revealed a questionable rigidity of the muscles of the back and patchy areas of mild hyperesthesia over the twelfth dorsal root distribution bilaterally, most noticeable on the right.

On x-ray examination December 15 the body of the eleventh dorsal vertebra showed a partial compression fracture of the anterior portion inferiorly. There was definite buckling near the anterior-inferior angle, with localized condensation of the bone. The body of the twelfth dorsal vertebra showed a more extensive compression fracture, with definite concavity of the upper surface and a uniform diffuse zone of condensation extending across the entire upper surface. The anterior margin of the body of the twelfth vertebra was distinctly lower than the posterior margin. Likewise the vertical margin on the left was narrower than the corresponding right margin. There was slight lateral scoliosis at the junction of the eleventh and twelfth bodies in the anteroposterior views. In the lateral views, there was slight but distinct kyphosis at the same level, with definite narrowing of the anterior and particularly the posterior portion of the intervertebral space. No other evidence of fracture or dislocation could be seen in the vertebrae examined. The posterior portions of the lower five ribs appeared to be intact.

CASE 2.—J. O., a woman aged 30, who had her first convulsion Nov. 23, 1938, and her fifteenth and final one Jan. 16, 1939, occasionally mentioned interscapular pain in the back after the first or second treatment. During the second and third weeks in January her complaints became more pronounced, for the most part being expressed just before treatments, when she was somewhat apprehensive. January 20 the patient mentioned pain in the anterior part of the chest, for which reason treatment was omitted that day. In response to later questioning on the same day, all symptoms were minimized, the patient being unable to state definitely in which chest wall the pain was experienced. She thought x-ray examination unnecessary.

Physical examination gave negative results. Neurologic examination revealed patchy areas of slight hyperesthesia over the sixth and seventh dorsal root distribution.

On x-ray examination January 20 the fourth and fifth dorsal vertebrae showed slight compression fractures of their bodies, with definite irregular condensation just below the superior surface of each body. The body of the sixth dorsal vertebra had a compression fracture of somewhat greater degree. There was a definite wedge formation of this body, with a narrow anterior vertical margin. This body also presented a zone of increased density just below its superior surface. The body of the seventh dorsal vertebra showed a slight compression fracture along its upper part, with irregularity of the superior surface and a zone of increased density below it. This vertebra showed a slightly lower lateral margin on the left side as compared with the right. The fifth body, on the other hand, showed a narrower right margin as compared with the left. There was slight kyphosis in this region centering at the level of the wedge-shaped sixth body. There was also moderate S-shaped lateral scoliosis in this region, with slight rotation. The intervertebral spaces did not seem to be appreciably changed in size, although there was slight narrowing anteriorly.

The remaining upper and lower dorsal vertebrae did not show any evidence of fracture, dislocation or other bony injury. The bony portions of the ribs also appeared to be intact.

Fig. 2 (case 2).—Compression fractures of the bodies of the fourth, fifth, sixth and seventh dorsal vertebrae, all showing concavity with zones of increased condensation in the upper portions. The body of the sixth vertebra shows distinct wedge shape.

CASE 3.—E. O., a woman aged 41, who had two convulsions, Jan. 13 and Jan. 20, 1939, complained of slight interscapular pain for three or four hours after the first treatment.

After the last seizure she complained of the same pain and has continued to experience some discomfort.

Physical and neurologic examinations gave negative results except to reveal some tenderness to slight percussion over the upper part of the dorsal spine.

On x-ray examination January 23 the bodies of the fifth and sixth dorsal vertebrae showed slight compression fractures of their superior portions. There was irregularity along the superior surfaces of both bodies, with a slight localized increase of calcium deposition. The process was slightly more marked in the fifth body. The anterior portions of the interspaces

between the fourth, fifth and sixth vertebrae showed slight narrowing. No other fracture or dislocation could be detected in the dorsal vertebrae. The ribs also appeared to be intact.

CASE 4.—L. G., a woman aged 31, who had a total of eleven convulsions from Nov. 18 to Dec. 23, 1938, began early in the course of treatment to complain of interscapular pain in her back. After treatment was discontinued she mentioned that about the only time she noticed pain was when playing the piano for long periods. This patient was discharged from the hospital Jan. 17, 1939.

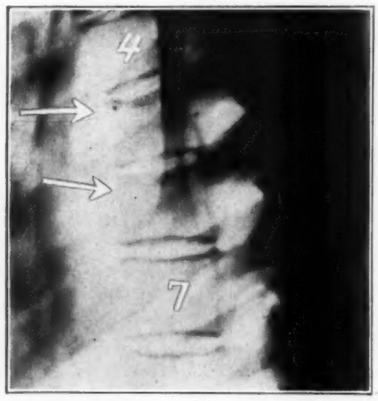

Fig. 3 (case 3).—Slight compression fracture of the superior portion of the body of the fifth dorsal vertebra and probable compression fracture of the upper portion of the body of the sixth vertebra.

Because of the fractures discovered in other cases of pain in the back, she was called into the hospital. The history while she was out of the hospital was that on turning her trunk she occasionally experienced discomfort.

Physical and neurologic examinations gave negative results.

On x-ray examination January 24 the bodies of the fifth and seventh dorsal vertebrae showed definite compression fractures. Both these bodies showed wedge formation, which was slightly more apparent in the seventh. There was a distinct increase in calcium deposition just below the superior margin of the seventh body, indicating slight reparative reaction. Slight narrowing was seen in the anterior portions of the intervertebral spaces from the fourth to the seventh vertebrae. Slight kyphosis was noted on the lateral view. The remaining dorsal vertebrae and the ribs showed no evidence of fracture, dislocation or other bony injury.

CASE 5.—L. S., a woman aged 48, who had five convulsions between Dec. 9 and Dec. 30, 1938, during this time complained of backache. She was discharged Jan. 3, 1939. A member of the hospital personnel visited her home January 12 and reported that she was complaining of pain in her back. On account of this she was called into the hospital January 24.

Physical and neurologic examinations gave negative results.

On x-ray examination January 24 the body of the fifth dorsal vertebra presented a definite but slight compression fracture involving the superior portion chiefly. There was a definite decrease in the vertical height of the body, with a slight bulging at the anterior superior margin. There was a zone of increased calcium deposition just below the superior surface. This indicated a slight reparative reaction. The superior surface of the body of the sixth dorsal vertebra showed slight irregularity and increased thickening, suggesting a probable slight compression fracture. The interspaces between the fourth, fifth and sixth vertebrae showed slight narrowing anteriorly. There was no definite kyphosis. The remaining dorsal vertebrae showed no evidence of definite bony injury or disease. The ribs all appeared to be intact.

CASE 6.—A. H., a woman aged 52, who had three convulsions Jan. 13, 16 and 20, 1939, for the first time on January 24 mentioned having pain in her back, which she attributed to a mild infection of the respiratory tract. In response to questioning January 26, she showed little concern but admitted having noticed a disturbance after each treatment and described it as discomfort with no definite pain. The greatest discomfort was observed when she was sitting to have her hair dressed.

Physical and neurologic examinations gave negative results.

On x-ray examination January 27 the body of the seventh dorsal vertebra showed a distinct compression fracture of its upper portion, with definite but slight wedge formation. The anterior surface of this body was slightly lower than the posterior surface. The superior surface was irregular and just below it was a zone of slightly increased density. In one of the lateral views the superior surface of the body of the sixth dorsal vertebra seemed slightly irregular and suggested the possibility of slight compression. The evidence, however, was not definite. The remaining dorsal vertebrae and the ribs showed no evidence of definite fracture or other bony injury.

CASE 7.—D. D., a woman aged 35, who had eleven convulsions from Nov. 23, 1938, to Jan. 30, 1939, spoke on a few occasions of her back hurting during the first part of the treatment. Both January 24 and 26 she denied having any pain in the back except slight discomfort in the early morning.

Physical and neurologic examinations gave negative results.

On x-ray examination January 27 the bodies of the fifth and sixth dorsal vertebrae showed compression fractures involving their upper portions. There was definite concavity of the superior surfaces of both of these bodies, with a definite zone of condensation adjacent. The concavity was more pronounced in the body of the sixth vertebra, which also showed slight wedging. The anterior surface of this body was definitely lower in height than the posterior surface. Slight kyphosis was visible in the lateral view, centering at the level of the body of the sixth vertebra. The remaining dorsal vertebrae did not show any positive evidence of bony injury. The ribs likewise appeared to be intact.

CASE 8.—L. G., a woman aged 48, who had eight convulsions from Nov. 18 to Dec. 23, 1938, made no complaint whatever and was discharged from the hospital Jan. 3, 1939. Her husband, while on a business visit to the hospital January 28, casually mentioned that his wife had some pain in her back and sides which was attributed to unaccustomed housework and digestive disturbance.

Physical examination disclosed slight tenderness over the lower half of the dorsal spine. It has as yet been impossible to have the patient in for neurologic examination.

On x-ray examination January 28 the tenth dorsal vertebra showed a very marked compression fracture of its body, with considerable wedge formation, the anterior surface being approximately two thirds the height of the posterior surface. There was considerable condensation in the upper half of the body, especially close to the compressed superior surface. There was likewise definite anterior bulging in the neighborhood of the anterior superior angle. The left margin of the body was distinctly lower in height than the right margin. The interspace between the ninth and tenth vertebrae appeared to be slightly narrowed, especially anteriorly. The seventh dorsal vertebra showed a partial compression fracture involving its superior surface, with concavity and slight condensation just below the surface. The remaining dorsal vertebrae did not show any evidence of fracture, dislocation or other bony injury. In the lateral views there did not appear to be any obvious kyphosis at the level of the injured tenth vertebra.

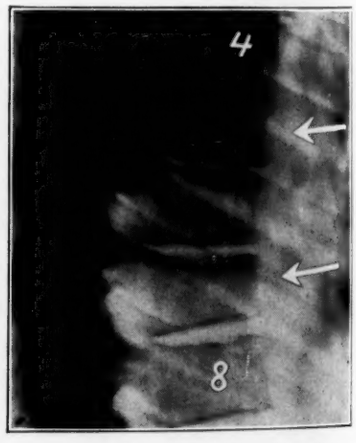

Fig. 4 (case 4).—Compression fractures of the bodies of the fifth and seventh dorsal vertebrae. Both show slight wedge formation but especially the seventh. There is slight kyphosis.

With the cases as reported, it is seen that in 100 per cent of all cases in which there was a complaint of pain in the back there was definite pathologic change of traumatic origin in one or more dorsal vertebrae. Of the seventeen patients treated, these represented all who complained of pain in the back (47 per cent); none of the other patients had x-ray studies. There had

been no variation of the usual procedures in this series which would account for any greater occurrence of such complications. However, I have not heard of any one previously reporting observations of this nature.

Walk and Mayer-Gross [6] reported: "The more severe injuries which we have found recorded, and all of which occurred with cardiazol (metrazol), are fractures of the neck of femur, including one bilateral case (Kerstens); various fractures of the humerus, again including one bilateral case (Kraus); fractures of the scapula (Briner); dislocations of the shoulder and of the jaw." In addition we have heard of cases of fractures of the transverse processes of the spinal vertebrae.

The literature occasionally mentions the presence of pain in the back but gives no special attention to it; e. g. Briner,[7] "Sometimes muscle cramps appear, predominantly in the back"; Walk and Mayer-Gross,[6] "In others the complaint was of pains in the limbs, back or head, persisting after recovery from the fit," and Kennedy,[5] "Patients who can cooperate say that they are tired and sometimes complain of backache." We have heard verbal statements to the effect that a large percentage of all patients have complained of pain in the back.

The end result and associated complications of the condition here reported are yet to be seen. As a late complication, even with some of the patients who might not have sustained a fracture, symptoms resulting from a herniated or ruptured intervertebral disk will have to be considered. Mixter and Ayer [8] in reporting what was considered a typical case history of herniation of a disk into the lumbosacral canal said: "The present symptoms are similar to pain experienced six years ago which came on suddenly when lifing a heavy bale of cloth, necessitating bed rest for five weeks. In the intervening four years he has been well and active." Walsh and Love [9] noted an intermittence of symptoms in 86 per cent of cases of protrusions of the lumbar disk, the average duration of symptoms before operation being six years.

In view of the relatively short period during which convulsive therapy has been employed, the average delay in the occurrence of distressing symptoms due to herniation of an intervertebral disk and the demonstrable pathologic change in the cases here reported, the possibility of damage to the intervertebral disk cannot be discarded. It would be interesting as well as beneficial to make iodized oil and spinal fluid protein studies to determine the absence or presence of any disk herniation. Also, an x-ray examination of metrazol-treated patients not complaining of pain in the back would be of interest in comparison with these that have shown definite changes in the vertebral bodies.

This preliminary report directs attention to a previously undescribed condition, compression fracture of the vertebrae resulting from metrazol convulsive therapy. The problem of combating this detrimental feature of an otherwise beneficial therapy in the treatment of mental illness is being studied with orthopedic and roentgenologic consultants, and the results obtained will be presented in a later contribution.

6. Walk, Alexander, and Mayer-Gross, W.: Observations on Convulsion Therapy with Triazol, J. Ment. Sc. **84**: 637-663 (Sept.) 1938.

7. Briner, Otto: Results of Convulsion Therapy in the Psychiatric Clinic in Berne, Am. J. Psychiat. **94**: 167-171 (May Supplement) 1938.

8. Mixter, William J., and Ayer, James B.: Herniation or Rupture of the Intervertebral Disk into the Spinal Canal, New England J. Med. **213**: 385-393 (Aug. 29) 1935.

9. Walsh, M. N., and Love, J. G.: Proc. Staff Meet., Mayo Clin. **13**: 203-208 (March 30) 1938.

COMMENT

By Dr. Isaac Gerber (consultant roentgenologist to Butler Hospital): Compression fractures in the upper half of the dorsal spine are relatively uncommon. In this group of eight cases, a complete series of stages in the production of compression fracture has been obtained. The fractures vary from the very obviously advanced compression seen in cases 1 and 8 to the very minimal changes observed in case 6. Some of the changes were so slight as to warrant a label of questionable (body of the sixth dorsal vertebra in case 5). In all cases, however, at least one vertebral body showed characteristic injuries sufficient to warrant a positive diagnosis of compression fracture of some degree.

At first it was thought that the extent of injury to the dorsal vertebrae was proportional to the number of convulsions produced. Patient 2, for example, who had fifteen convulsions, had the widest extent of damage, covering four vertebrae. Likewise patient 3, with two convulsions, showed only slight changes in two adjacent vertebrae, which could easily have been overlooked. More careful analysis, however, showed that one of the most advanced lesions occurred with only three convulsions (case 1). It seems probable therefore that the severity of the individual convulsions may be as important as the number.

Fig. 5 (case 8).—The body of the tenth dorsal vertebra shows a marked compression fracture with considerable wedge formation. The body of the seventh vertebra shows partial compression of the superior surface with definite concavity and slight condensation just below the surface.

The mechanism of the force producing these fractures consists of repeated violent flexions of the body with both the clonic and the tonic convulsions. The concavities noted on the upper surfaces of many of the damaged bodies are probably due to pressure from the nucleus pulposus in the intervertebral disk.

The production of repeated trauma to the vertebral bodies by a series of closely spaced convulsions constitutes a state very much resembling the supposed etiologic factor in the production of Kümmell's disease. This disease is a peculiar osteitis of the vertebral body with wedge-shaped deformity, which at present is believed to result from repeated strains or slight trauma. Further consideration will have to be given to this aspect in the closer analysis and study of these cases, which will be made later.

By Dr. Henry F. McCusker (visiting orthopedist at Rhode Island Hospital): In this series, the majority of the fractures occurred in an uncommon location, the level of the fifth, sixth and seventh dorsal vertebrae. Compression fractures of the bodies of the dorsal verte-

brae usually occur in the upper five or in the lower three vertebrae. The usual precipitating trauma is a fall with the spine thrown into sharp anterior flexion, the jackknife position. In those convulsions which I have observed, the forward flexion occurring during the clonic phase appeared neither violent nor of sufficient range to be termed jackknifing. Whether these fractures were caused by trauma during a single convulsion or were the end result of repeated trauma suffered during successive convulsions cannot be answered with any degree of certainty, but symptoms referable to the back occurred early in the course of treatment in several of the cases. Incidentally, it should now be apparent that careful x-ray examination should be made in every case no matter how slight the backache. The slight symptom alone may deceive the physician as to the presence of this serious lesion.

Because of the high incidence of these fractures occurring during treatment, some method must be devised to control the motions of the spine during the convulsive state. A modification of the curved Bradford frame to which the patient can be strapped is now under consideration, but the details have not yet been worked out completely. Until the patient can be protected by adequate apparatus this form of treatment must necessarily be suspended.

The majority of the cases here reported show but slight disability from the spinal lesion. At this time it is impossible to prophesy what late results may ensue, such as the formation of definite kyphosis due to further collapse of the involved vertebral bodies (Kümmell's disease) or further narrowing of the intervertebral spaces with consequent symptoms due to disturbance of the intervertebral disks. X-ray reexamination every three months at least will be required until complete healing of the fractures has occurred.

SUMMARY

1. Seventeen patients were treated, eight of whom complained of backache.

2. All patients complaining of pain in the back, regardless of its mildness, showed x-ray evidence of compressed fractures and constituted 47 per cent of the patients treated.

3. Pain usually appears early in the course of the treatment, though in one of the eight cases it did not develop until three weeks after the treatment had been discontinued.

4. Slight tenderness on percussion of spinous processes was present in some of the cases.

5. Patients 1, 2 and 8 presented symptoms suggestive of root pain, patients 1 and 2 having ill defined areas of hyperesthesia. Circumstances have prevented examination of patient 8.

6. Disabling effects are practically nonexistent only patient 1 showing evidence of disability, and this being slight.

7. It is questionable whether the fractures are the result of a single severe convulsion or repeated convulsions.

8. The question of late complications resulting from herniation or rupture of the intervertebral disk cannot as yet be answered.

9. All fractures here seen were confined to the dorsal vertebrae.

TRAUMATIC COMPLICATIONS OF CONVULSIVE SHOCK THERAPY

A METHOD OF PREVENTING FRACTURES OF THE SPINE AND LOWER EXTREMITIES

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AND
A. E. BENNETT, M.D.
OMAHA

Convulsive shock therapy has been employed for several years in the treatment of severe psychoses without sufficient attention being paid to undesirable complications.[1] We are reporting seven cases of spontaneous fractures which have occurred during the convulsions induced by metrazol (pentamethylenetetrazol). We shall also suggest a procedure for preventing most of these catastrophes.

Lehndorff [1a] was the first to report fractures resulting from the severe muscular contractions associated with tetanus. Later Sonntag [2] reported fractures of the elbow and dislocations of the shoulder, Baisch [3] discussed fractures of the femoral neck and Wilhelm [4] described fractures of the forearm. All these fractures occurred during tonic convulsive seizures of tetanus. Roberg [5] made a comprehensive study of the spinal changes and concluded that the forces exerted by tetanic muscular contractions produced compression fractures of the midthoracic vertebral bodies, usually those of the fifth and sixth vertebrae, in definite contrast to ordinary traumatic compression fractures, which center about the body of the first lumbar vertebra.

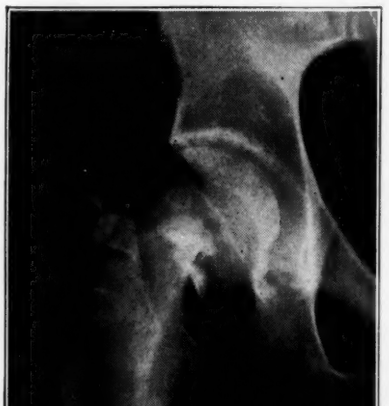

Fig. 1 (case 1).—Impacted fracture of the right femoral neck.

The muscular contractions associated with tetanus are comparable to those induced by convulsive shock therapy as used in the treatment of psychoses. Meduna and Friedman [6] recently collected 3,000 cases of shock therapy and found that in 1.1 per cent there was evidence of "mechanical complications." No mention.

Read before the Central Neuropsychiatric Hospital Association, Chicago, March 17, 1939.

From the departments of orthopedics and neuropsychiatry of the University of Nebraska College of Medicine and the Bishop Clarkson Memorial Hospital.

1. Since our report was submitted for publication an important contribution has been made by Polatin, Philip; Friedman Murray M., and Harris, Meyer M.: Vertebral Fractures Produced by Metrazol Induced Convulsions, J. A. M. A. **112:** 1684-1687 (April 29) 1939.

1a. Lehndorff, Heinrich: Deformitäten der Wirbelsäule und der Rippen im Verlaufe eines schweren Tetanus, Wien. med. Wchnschr. **67:** 2477-2489, 1907.

2. Sonntag, Erich: Die bisherigen Erfahrungen ueber den Wundstorrkrampf in dem jetzigen Kriege, Ergebn. d. Chir. u. Orthop. **10:** 1-6, 1918.

3. Baisch, K.: Fall von chronischem Tetanus, Deutsche med. Wchnschr. **42:** 1624-1626, 1917.

4. Wilhelm, Theodore: La cyphose tétanique, J. de chir. **22:** 295 (Oct.) 1923.

5. Roberg, O. Theodore: Spinal Deformity Following Tetanus, J. Bone & Joint Surg. **19:** 603-629 (July) 1937.

6. von Meduna, Laszlo, and Friedman, Emerick: The Convulsive-Irritative Therapy of the Psychoses, J. A. M. A. **112:** 501-508 (Feb. 11) 1939.

however, was made of the nature or severity of these complications. From our own experiences, we are convinced that in this form of therapy injuries to the skeletal system occur much more frequently than is generally appreciated. The fact that psychotic patients are often uncooperative may contribute to the recognition of only major accidents. Since we have encountered three fractures in a series of some 800 shock treatments, a restudy is being made of some of the earlier cases, and old fractures and injuries are being found. We believe that the frequent complaints of backache after treatment formerly thought to be muscular in origin very likely are from vertebral trauma, e. g. in cases 3 and 4. A high incidence of fractures will naturally deter the use of this very valuable procedure. Metrazol has proved most useful in the treatment of severe depressive psychoses.[7] The problem is so important that preventive measures must be devised if the treatment is to survive.

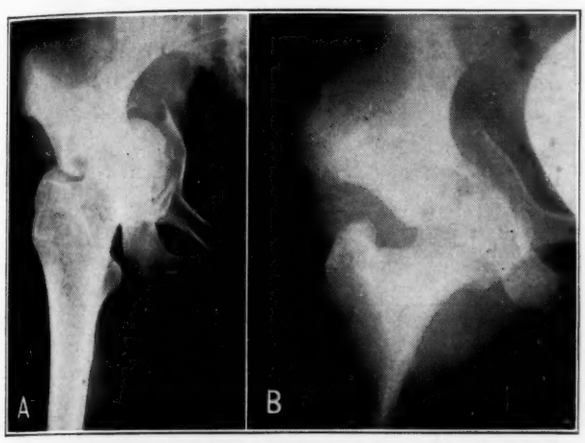

Fig. 2 (case 2).—*A*, fracture of the right acetabulum with intrapelvic dislocation of the femoral head. *B*, appearance after reduction, showing an additional chip fracture of the femoral head.

The following cases are representative of the mechanical accidents that can occur during a metrazol shock. All treatments were given by neuropsychiatrists who are thoroughly familiar with this form of therapy and in institutions well equipped for such procedures.

CASE 1.—A man aged 22, given a course of insulin shock therapy for catatonic schizophrenia in September and October 1937 and, because of a mild relapse, one metrazol shock October 26, was subsequently discharged in spite of a vague ache in the right hip. On return examination, November 3, he was still not using or bearing weight on the right leg. Physical examination revealed the right leg in 15 degrees external rotation and 20 degrees flexion contracture, the right leg three-fourths inch shorter than the left, the trochanter above Nelaton's line and axial compression of the femur painless. Roentgenograms of the pelvis disclosed an impacted fracture of the right femoral neck in 20 degrees varus, the lateral view showing good alinement (fig. 1).

CASE 2.—A woman aged 21, with hebephrenic schizophrenia, was given a fourth metrazol shock Feb. 12, 1939, and during the convulsion a crumbling sound was heard, referred from the pelvis. Physical examination disclosed a narrowed right hip area, with depressed trochanter and three-fourths inch shortening of the right leg. Roentgenograms revealed a fracture of the right acetabulum with intrapelvic dislocation of the femoral head (fig. 2 *A*). With the patient under avertin anesthesia, the fracture and dislocation were reduced by manipulation and strong fracture table traction as described by Orr.[8] Roentgenographic recheck gave satisfactory results, showing an additional chip fracture of the femoral head (fig. 2 *B*). A steel pin was inserted through the proximal crest of each tibia and immobilization carried out with a double hip spica cast. Thirty pound traction to a cross bar was instituted. Subsequent studies of the blood showed calcium 10.9 mg. and phosphorus 3.5 mg.

CASE 3.—A man aged 36, given two metrazol shocks for a depressive psychosis, had severe pain in the upper part of the back, aggravated by coughing, sneezing and deep breathing, after the second treatment. At physical examination he was tender along the muscles of the back on both sides of the spinous processes from the fourth to the tenth thoracic vertebra. The spinous processes were tender, and pain was produced on contraction of the serratus magnus and the trapezius muscles bilaterally. The impression given was that these muscles had been strained. Short wave heat therapy and a tight chest binder with shoulder straps were used. The patient returned Feb. 21, 1939, with the pain in the back unchanged. Roentgenograms disclosed moderate compression fractures of the sixth and seventh thoracic vertebral bodies (fig. 3). A Bohler hyperextension plaster cast was applied, with relief of symptoms. Subsequent studies of the blood showed 11.9 mg. of calcium and 3.5 mg. of phosphorus.

CASE 4.—A man aged 31, with reactive depression of nine months' duration, was given three metrazol shocks. Persistent pain in the back followed treatment, with radiation around the right side of the chest. Roentgenograms disclosed slight compression of the fifth and sixth thoracic vertebral bodies, with a small chip fracture (fig. 4).

CASE 5 (Dr. W. L. Sucha).—A man aged 53 was treated for paranoid schizophrenia by means of metrazol shock. During the sixth shock, Dr. Sucha heard a crunching sound in the pelvis. Roentgenograms disclosed an intrapelvic dislocation of the left femoral head secondary to a fractured acetabulum, a duplicate of that shown in figure 2.

CASE 6 (Dr. J. W. Martin).—A woman aged 42 was having her twentieth metrazol shock for a manic-depressive psychosis when a soft grating was heard, apparently coming from the right shoulder. Roentgenograms disclosed an avulsion fracture of the lesser tuberosity (fig. 5).

CASE 7 (Dr. W. L. Sucha).—A woman aged 49 during a second metrazol shock, Aug. 17, 1939, sustained a supracondylar fracture of the femur (fig. 6).

CASE 8 (Dr. W. L. Sucha).—A man aged 23, six months before treatment had sustained a severely comminuted fracture of the elbow. During shock treatment April 15, 1938, the elbow was refractured.

Fig. 3 (case 3).—Moderate compression fractures of the sixth and seventh thoracic vertebral bodies.

One might well ask Is some predisposing factor, unrecognized at present, complicating the picture in shock therapy? A plausible consideration is the possible presence of bone atrophy. Steiner[9] mentioned two middle-aged men in whom multiple pelvic fractures developed spontaneously on the basis of starvation osteomalacia. It is not unreasonable to expect moderate dietary difficulty in psychotic patients, with resultant osteoporosis, but there was no such provoca-

7. Bennett, A. E.: Convulsive Shock Therapy in Depressive Psychoses, Am. J. M. Sc. **196**: 420-428 (Sept.) 1938.

8. Orr, H. Winnett: Osteomyelitis and Compound Fractures of the Pelvis, Surg. Gynec. & Obst. **59**: 673-679 (April) 1932.

9. Steiner, P.: Hungerosteomalazie mit multiplen spontanfrakturen des Beckens, Wien. med. Wchnschr. **77**: 972 (July 16) 1927.

tive factor in any of the reported cases, as all the patients were well nourished. In cases 2 and 3, in which the value for blood phosphorus was below the adult minimum, osteoporosis may have been present and have contributed toward the severe acetabular shattering.

To relieve the body of severe stresses to which it is subjected during a therapeutic convulsion, we have instituted the following prophylactic treatment to remove the potential forces of the lower extremity and spinal flexor muscular contractions: From thirty minutes to an hour before injection of metrazol, 10 mg. of pontocaine hydrochloride[10] or 100 mg. of procaine hydrochloride dissolved in 4 cc. of spinal fluid obtained by puncture between the first and second lumbar vertebrae by means of a 22 gage needle is slowly reinjected intraspinally.

Fig. 4 (case 4).—Slight compression of the fifth and sixth thoracic vertebral bodies, with a small chip fracture.

This transient anesthesia, with complete sensory and motor paralysis of all thoracic and lumbar segments, wears off in about an hour after the convulsion. The convulsive shock ensues without contraction of the anesthetized areas. In order to reinforce the cerebral anoxic affect we prolong the period of apnea by holding the mouth and nose tightly closed for from thirty seconds to a minute after the tonic spasm is over. Since shock therapy is given every three days for about five to eight injections in the treatment of affective psychoses, the spinal anesthetic offers no serious drawback to the treatment. With the spinal and lumbar muscles relaxed, one then has only to pay careful attention to the upper extremities, and at the onset of the tonic spasm both arms are held adducted against the wall of the chest.

Fig. 5 (case 6).—Avulsion fracture of the lesser tuberosity.

For schizophrenic patients who require a larger number of metrazol shocks we have not as yet experienced mechanical complications with the technic we employ. We first induce hypoglycemic shock, at the onset of coma administer metrazol and immediately follow with the administration of hypertonic dextrose solution. The tetanic spasm seems less severe after insulin shock has set in, and this may very likely be a factor in preventing fractures with this group of patients.

Because of these hazards of treatment and for other reasons mentioned elsewhere by one of us,[7] we are still inclined to disagree with those who recommend this type of therapy for home, office or general hospital management. Only in a well equipped psychiatric department under most careful supervision can it be administered successfully and some of these serious complications be prevented.

CONCLUSIONS

1. The muscular contractions of shock therapy may be classed with those of tetanus in their severity and subsequent pathologic change. We believe that future studies will reveal a higher incidence of fracture complications, especially spinal, than has previously been suspected.

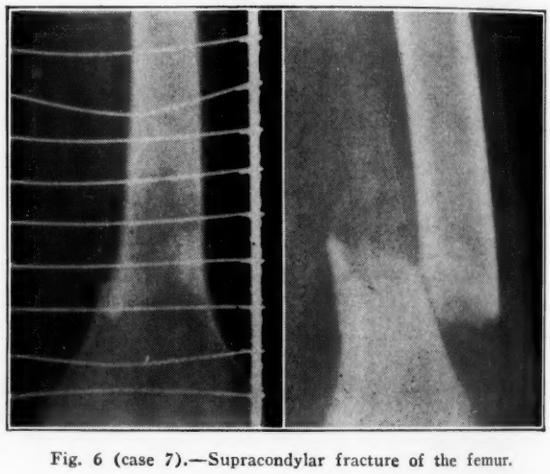

Fig. 6 (case 7).—Supracondylar fracture of the femur.

2. Preliminary studies of the blood calcium and phosphorus would indicate the presence of osteomalacia in advanced stages only.

3. Persistent pain in any region of the body following shock therapy should call for immediate roentgenologic examination.

4. Spinal anesthesia induced prior to shock therapy prevents severe fractures of the spine and lower extremities. Because of the present hazards of convulsive shock therapy, its use should be restricted to well equipped psychiatric departments.

527 Medical Arts Building.

10. Supplied by the Winthrop Chemical Company, Inc., for investigative purposes.

Manson and Winged Insects.—The life of Manson may well be regarded as an epoch, for he initiated a new era in medicine, viz., the association of the spread of disease in man with the agency of winged insects. This was such a revolutionary conception that it could only be gradually accepted by the majority of the medical profession, and still more gradually by the lay public. It may be argued that there were others before the subject of this biography who had in some hazy way associated certain diseases with the presence of insect life, but there it remained more as a nebulous idea than as a concrete and proven fact. Manson did more than this: he started and fathered the teaching of a new department of medicine—Tropical Medicine—of which he is now justly regarded as the greatest master of all time.—Power, Sir D'Arcy: British Masters of Medicine, Baltimore, William Wood & Co., 1936.

PREOPERATIVE ROENTGEN DIAGNOSIS OF GALLSTONE ILEUS

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AND
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Preoperative roentgen diagnosis of intestinal obstruction due to gallstone has only rarely been recorded in the literature. In a series of 3,064 cases of intestinal obstruction reported by the British Medical Association [1] the incidence of gallstone as the causative factor was twenty-eight cases, or 0.9 per cent. In none of these cases was a diagnosis reported as having been made preoperatively. Wilms [2] reviewed the available statistics in Germany and found gallstones as the cause of obstruction in 2.1 per cent of cases. Sante [3] found four cases in 287 of obstruction of the bowel. The operative mortality varies between 40 and 50 per cent, and most surgeons believe that delay in operating is largely responsible for the high death rate. A review of the literature reveals only seven cases [4] in which a definite diagnosis of gallstone ileus was established prior to operation; these are listed in the accompanying table.

In cases of intestinal obstruction running an obscure course, x-ray examination may often be advantageously undertaken in order to establish the diagnosis. Numerous investigators advocate x-ray examination in all cases of obstruction except those in which there is diffuse peritonitis. Thus fluoroscopic examination and a film of the abdomen in the erect position may furnish evidence of fluid levels or abnormal collections of gas. Ochsner [5] pointed out that great caution should be exercised in the oral administration of barium sulfate because of the danger of making the ileus more acute. The x-ray scout film may show the stone early, before distention of the loops of bowel has occurred. Isolation and identification of the shadow caused by the stone after distention is difficult, so that in most cases only a diagnosis of ileus of the small bowel can be made.

Preoperative Roentgen Diagnosis of Gallstone Ileus

Author	Sex	Age	Symptoms	Roentgen Examination (A) Following Barium Sulfate Meal (B) No Contrast Medium Given	Operation
Lüdin	♀	70	Pain, vomiting	(A) Gastric retention, distention of small bowel; opaque oval shadow corresponding to gallstone seen in small bowel	Jejunolithotomy; gallstone 4.5 cm. in diameter noted in lower end of small bowel; autopsy showed a cholecystoduodenal fistula
McWhorter	♀	63	Epigastric pain, vomiting	(B) First examination: small, spherical, dense shadow with a faint oval shadow about it	Cholecystectomy; cholecystoduodenal fistula noted; no gallstones seen
				Second examination, after increase in severity of symptoms: the same shadow noted previously in the gallbladder region was seen on the right, in the region of the ileocecal valve; bowel distention was noted	Enterostomy; gallstone in region of ileocecal valve
Brocq, Brodin and Aimé	♀	50	Abdominal pain and soreness, vomiting	(A) Normal stomach, peculiar bulb with no contractive power; barium sulfate did not fill bulb uniformly but only about the periphery	Enterostomy with extraction of calculus; death 1 day later; cholecystoduodenal fistula
Crane	♂	80	Pain, vomiting, abdominal distention	(A) Large calculus in region of duodenojejunal junction, causing distention of duodenum; contrast medium noted in gallbladder, common duct and bile duct	Jejunolithotomy; gallstone removed from intestine; death resulted four days later
Kaiser	♀	55	Obscure abdominal pain	(A) Fluoroscopy showed dilated loops of small bowel filled with barium sulfate, with a filling defect in the duodenal bulb	Jejunolithotomy; stone in distal portion of jejunum; death four days later; autopsy showed cholecystoduodenal fistula
Schéle	♂	64	Anorexia, distention, pain, vomiting	(A) Delayed emptying, gastric retention, duodenal dilatation; contrast medium noted in biliary ducts and gallbladder; gallstone noted in region of duodenojejunal flexure	Jejunolithotomy; roentgen examination after operation showed barium sulfate and air in gallbladder
Säfwenberg	♂	79	Abdominal pain, vomiting, indigestion	(A) Fluid level, distention of small bowel, evidence of gallstone in region of small bowel surrounded by opaque medium	Enterostomy; autopsy showed cholecystojejunal fistula
	♀	60	Pain in region of kidney, vomiting	(B) Stone with concentric ring shadow lying in distended jejunal loop	Enterolithotomy; death two days later

Béchet,[6] Guillemin,[7] Santy,[8] Vidgoff [9] and Moulonget [10] have described cases in which x-ray examination established a diagnosis of ileus and in which at operation or autopsy impacted gallstones were seen in the intestine. In addition to the usual signs of ileus, the barium sulfate meal may demonstrate the fistulous tract between the gallbladder and the bowel.

REPORT OF CASE

A white woman aged 67, admitted to the Massachusetts Memorial Hospitals March 28, 1938, complaining of nausea and vomiting for six months, stated that she had had "gallstones" for twenty-seven years. About eleven years before she had had two severe attacks of jaundice with pain in the right upper quadrant. For the past six months she had noted epi-

From the Departmet of Radiology, Massachusetts Memorial Hospitals, George Levene, M.D., Director.

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2. Wilms, Max: Der Ileus, Stuttgart, Ferdinand Enke, 1906.
3. Sante, L. R.: Intestinal Obstruction, Am. J. Roentgenol. **34:** 744-754 (Dec.) 1935.
4. These were reported by
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9. Vidgoff, I. J.: Acute Intestinal Obstruction Due to Gallstones, Am. J. Surg. **19:** 458-461 (March) 1933.
10. Moulonget, P.: La radiographie abdominale sans préparation dans l'occlusion intestinale aiguë, Bull. et mém. Soc. nat. de chir. **60:** 1405-1412 (Dec. 29) 1934.

gastric distress with the taking of food, accompanied by marked gastric eructations. Vomiting occurred every two or three days, with ejection of large amounts of food containing remnants of the previous day's meal. The patient had lost 30 pounds (13 Kg.) during the last six months.

March 23 epigastric distress became markedly increased and in the evening there was a gradual onset of pain in the right upper quadrant, radiating to the right flank and thigh. The pain increased in intensity and became so severe as to cause the patient to cry out in agony. During the night the pain diminished, the right upper quadrant and thigh, however, remaining quite tender. This episode was followed by nausea and continued vomiting of bile, mucus and fecal material. No food could be retained. In the morning March 27 and 28 there were repeated attacks of cyanosis and dyspnea.

On admission the patient appeared rational, well developed, well preserved, obese but dehydrated, and acutely ill. She was very restless and her reflexes were hyperactive. Trousseau's

Fig. 1.—Upper right quadrant, showing gallstones. Note the gas surrounding the large stone (arrows).

sign and a carpal spasm were elicited when the cuff of the blood pressure apparatus was inflated about her arm. The respirations were slow and shallow and the lips were cyanotic. The blood pressure was 80 systolic and from 30 to 40 diastolic. The heart sounds were poor. The abdomen was obese but was not distended.

The patient was given 2,000 cc. of saline solution, and Wangensteen suction was begun. X-ray examination showed several more or less opaque circular shadows in the right upper quadrant which had the definite appearance of gallstones. The stomach showed a moderate amount of gas in the fundus, the remaining contour being defined by a small amount of gas. The large bowel could be identified by its gas content but no loops of small intestine were visualized, the absence of gas in the duodenal loop being particularly significant. Careful inspection of the film showed the gallstones in more or less compact formation with a faint halo of gas, indicating that these were contained in the same viscus. The diagnosis based on x-ray examination was obstruction of the duodenum by gallstones.

An operation performed March 31 by Dr. Milo C. Green revealed multiple stones in the fundus of the gallbladder, one large stone lying transversely in the first portion of the duodenum, approximately 1¼ inches from the pyloric sphincter. The stones were removed. After a posterior gastrojejunostomy

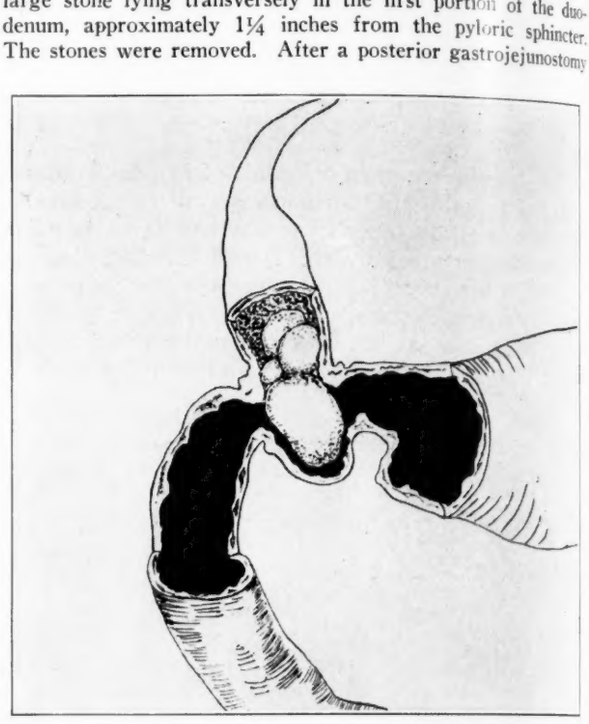

Fig. 2.—Stomach obstructed by a large single stone which has passed through the perforation in the gallbladder into the duodenum.

the gallbladder was freed from its firm adhesions to the liver. Through the stoma of the cholecystoduodenal fistula, four faceted gallstones were removed from the gallbladder and the

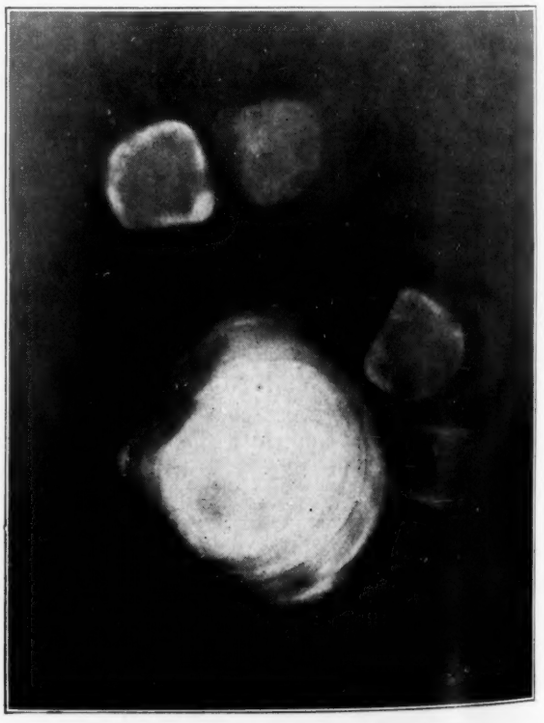

Fig. 3.—The stones after removal.

large single stone was extracted from the duodenum. The cholecystoduodenal fistula was then reconstructed.

The postoperative convalescence was uneventful except for the occurrence of a mild phlebitis of the left leg, which disappeared in five days.

While intestinal obstruction due to gallstones is less common than other forms of ileus, the possibility must be borne in mind since successful operation depends on early diagnosis. It is our opinion that in most cases of obstruction due to gallstones these are calcium stones. This can best be explained by the fact that perforation of the gallbladder is a result of chronic involutionary changes, during which there has been sufficient deposition of calcium to render the stones radiopaque.

The distribution of gas shadows is important. Gas proximal to the stone with no gas in the lumen distal to it should be considered strong evidence of mechanical obstruction due to stone.[11]

MASSIVE PULMONARY COLLAPSE TREATED WITH ARTIFICIAL PNEUMOTHORAX

REPORT OF A CASE

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AND
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CINCINNATI

Since William Pasteur[1] first described pulmonary atelectasis following diphtheria and then discussed its occurrence following surgical procedures[2] massive collapse of the lung has been frequently recognized by the medical practitioner.

The causes, symptoms and signs of this condition are well known and adequately described in the modern textbooks. The prognosis as to life when the condition is uncomplicated is usually excellent, although death may occur in debilitated subjects if collapse occurs in more than one lobe or bilaterally.[3] The greatest danger in pulmonary atelectasis is the secondary development of pneumonia. Since pneumonia in itself is a serious disease, it becomes important either to prevent pulmonary atelectasis or to relieve it as soon as possible when it does occur. In this brief report we shall confine ourselves to the therapy of the condition after it has occurred and make no mention of prophylaxis.

The methods of therapy usually employed at present, for postoperative collapse particularly, are apparently fairly effective. All more or less aim to release the secretions that may be obstructing the bronchi of the affected lung. These therapeutic measures consist of (1) loosening of any tight dressings, (2) induction of deep breathing with 10 per cent carbon dioxide in oxygen every fifteen or thirty minutes, (3) induction of hard coughing with the affected side uppermost by severe manual percussion of the chest, (4) postural drainage of the bronchus by assumption of a 10 per cent Trendelenburg position of the bed for from fifteen to thirty minutes every three or four hours,[4] (5) intravenous administration of a 10 per cent solution of sodium iodide to aid in the loosening and expulsion of bronchial secretions, (6) bronchoscopic treatment to remove any bronchial plug[5] (a difficult, dangerous and unpractical procedure in inexperienced hands) and rolling of the patient back and forth on the unaffected side[6] (which is quite difficult for an already acutely ill patient and has not proved overly successful).

The possibility of inducing artificial pneumothorax on the affected side in treating pulmonary collapse was first suggested by Elliott and Dingley[7] in 1914. At that time they wrote: "It is conceivable that the worst cases of cyanosis and pain might be relieved by an intrapleural injection of oxygen in order to restore the balance of volume and push back the displaced heart and the overdistended lung. Fortunately, these urgent cases are rare, and we have had no occasion to try this method since the possibility of such a line of treatment occurred to us." Unfortunately, nothing was done to carry out this far sighted suggestion until 1927, when Gordon Wilson,[8] speaking on atelectasis at the American Climatological and Clinical Association, suggested partial pneumothorax as an aid in diminishing an elevated negative pressure or making a negative pressure positive to assist in forcing an obstructing agent out of the bronchus. The entire procedure was placed on a more rational basis when it was learned shortly after that patients with pulmonary collapse characteristically had an increased negative pressure in the pleural cavity of the affected side.

Elkin[9] in 1927 presented three cases of atelectasis all with an increased negative intrapleural pressure on the side affected, but did not resort to introduction of air for treatment. In 1928 Habliston[10] reported four cases of atelectasis due to different causes with increased negative pressure in the pleural cavity on the affected side. (One case was again reported, in 1930, by Ashbury.[11]) This important accompaniment of atelectasis was substantiated later by Coryllos and Birnbaum.[12]

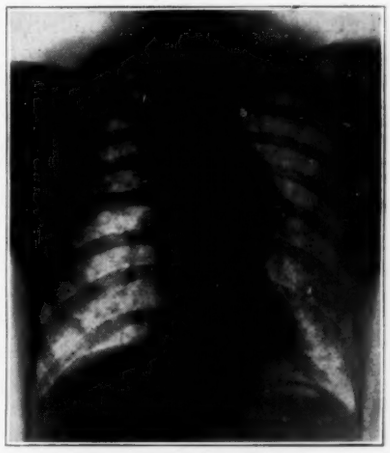

Fig. 1.—View taken Nov. 8, 1937.

The average normal intrathoracic pressure is approximately minus 70 mm. of water on inspiration and minus 40 mm. of water on expiration. Aron[13] found in thirty-six normal adults an average pressure of minus 79.6 mm. of water on inspiration and minus 34.29 mm. on expiration. The approximate average intrathoracic pressure on the atelectatic side in the cases reported in the literature is from minus 150 to minus 250 mm.

11. Since the completion of this paper, three additional cases have been noted in the literature in which the preoperative diagnosis of gallstone ileus was made.

1. Pasteur, William: Respiratory Paralysis After Diphtheria as a Cause of Pulmonary Complications with Suggestions as to Treatment, Am. J. M. Sc. **100:** 232, 1890.

2. Pasteur, William: Lancet **2:** 1351 (Nov. 7) 1908; Arch. Middlesex Hosp. **12:** 13 (Nov.) 1910; Lancet **1:** 1329 (May 20) 1911.

3. Hirschbeck, F. J.: Postoperative Massive Collapse of the Lung, Am. J. M. Sc. **164:** 268 (Aug.) 1922.

4. Christopher, Frederick, editor: Textbook of Surgery, ed. 1, Philadelphia, W. B. Saunders Company, 1936, p. 1005.

5. Jackson, Chevalier, and Lee, W. E.: Acute Massive Collapse of the Lung, Ann. Surg. **82:** 364 (Sept.) 1925.

6. Sante, L. R.: Massive Collapse of the Lung, J. A. M. A. **88:** 1539 (May 14) 1927.

7. Elliott, T. R., and Dingley, L. A.: Lancet **1:** 1305, 1914.

8. Wilson, Gordon: Tr. Am. Climat. & Clin. A., 1927, p. 205.

9. Elkin, D. C.: Ann. Surg. **86:** 885 (Dec.) 1927.

10. Habliston, C. C.: Intrapleural Pressures in Massive Collapse of the Lung, Am. J. M. Sc. **176:** 830 (Dec.) 1928.

11. Ashbury, H. E.: Recurrent Massive Collapse of the Lung, Due to a Benign Intrabronchial Tumor, Am. J. Roentgenol. **21:** 452 (May) 1929.

12. Coryllos, P. N., and Birnbaum, G. L.: Alveolar Gas Exchanges and Atelectasis, Arch. Surg. **21:** 1214 (Dec.) 1930.

13. Aron, quoted by Lord, Frederick T.: Diseases of the Bronchi, Lungs and Pleura, ed. 2, Philadelphia, Lea & Febiger, 1925, p. 718.

of water on inspiration and from minus 75 to minus 150 mm. on expiration. In one of Habliston's cases the pressure was minus 442 mm. of water on inspiration and minus 337 mm. on expiration.

Habliston used artificial pneumothorax on the affected side in two of his reported cases, with quick relief in both and a startling result in one, in which an intrabronchial tumor causing the collapse was expectorated two days after air was injected into the pleural cavity. In the other case the condition was due to pulmonary tuberculosis. This constituted the first report in the literature of the successful treatment of massive collapse by artificial pneumothorax. In 1930 Moorman [14] reported a case of pulmonary collapse in a white girl following an abdominal operation, quickly relieved by the introduction of 300 cc. of air into the pleural cavity on the affected side. Schindler and Gnagi [15] in 1938 reported a case of massive collapse of the lung in a child of 12 following an appendectomy, with complete and almost immediate reexpansion of the lung following the introduction of air into the pleural cavity on the affected side. As far as we can tell there are no other cases on record wherein this procedure was attempted.

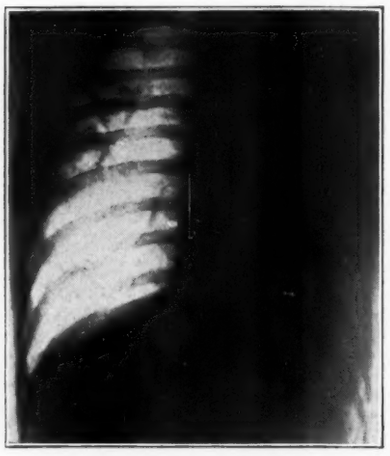

Fig. 2.—View taken Oct. 14, 1938, at the time the diagnosis of massive collapse of the left lung was made.

REPORT OF CASE

M. M., a Negro man aged 41, had been in this hospital continuously since October 1935. The diagnosis was far advanced pulmonary tuberculosis, dementia paralytica and aneurysm of the thoracic aorta (fig. 1). Until the present incident he had been doing fairly well with bed rest and antisyphilitic therapy.

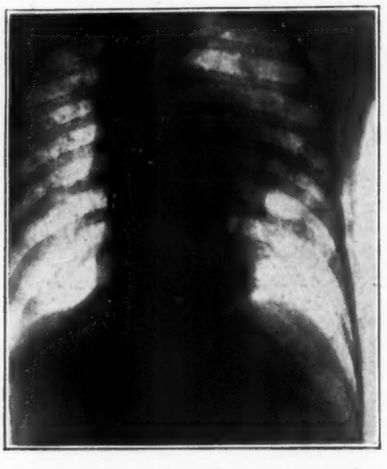

Fig. 3.—View taken Oct. 16, 1938, after reexpansion of the lung.

Early in the evening of Oct. 14, 1938, he suddenly became acutely dyspneic without apparent pain. At physical examination he was seen to be fairly well nourished, was sitting up in bed, was acutely dyspneic and was obviously in distress. The temperature was 100 F., the pulse rate 120, the respiratory rate 46 and the blood pressure 100 systolic, 75 diastolic. There was moderate cyanosis of the nail beds and lips. There was no pulsation of the jugular vein and no dependent edema, and the liver was not palpable.

The relevant physical signs were confined to the chest. There was limited excursion of the entire left side of the chest, with dulness to percussion over the whole left lung. The breath sounds were absent on the left. The right side of the chest was resonant to percussion, and the breath sounds came through strongly. The left border of the heart was found to be in the sixth interspace at the left midaxillary line by palpation of the maximal apical impulse. The right border could not be outlined by percussion. The heart sounds were of fair quality and the rhythm regular, with a rate of 120 a minute at the apex and wrist. There was no murmur audible. A diagnosis of massive collapse of the left lung was made. This was corroborated immediately by fluoroscopic and radiographic examination (fig. 2). The shift of the mediastinum to the left was readily apparent. It was thought that the collapse of the lung was due to obstruction of the left main stem bronchus by the aortic aneurysm, although pulmonary tuberculosis as an etiologic factor could not be ruled out.

The patient was closely watched for twelve hours. On the morning of October 15 he was worse, with increasing dyspnea. The temperature was 100 F., the pulse rate 130 and the respiratory rate 48. The chest signs were essentially the same as before. At this time it was decided to carry out artificial pneumothorax on the affected side. With a standard pneumothorax machine, 500 cc. of air was injected into the left pleural cavity at an approximate rate of 50 cc. a minute, with no immediate untoward result. The initial pressure was minus 160 mm. of water on inspiration and minus 80 mm. on expiration. At the completion of the procedure the average pressure was plus 15 mm. of water.

Fig. 4.—Lateral view, showing pneumothorax clearly; taken when figure 3 was taken.

Several hours later the patient was somewhat improved, and the evening of the same day saw a lessening of the dyspnea and almost complete disappearance of the cyanosis. The next morning, October 16, he was seen lying quietly in bed in apparent comfort with no dyspnea or cyanosis. The temperature was 98.6 F., the pulse rate 100 and the respiratory rate 22. The left side of the chest was now resonant to percussion, while the breath sounds came through strongly with many moist rales. The right side was resonant to percussion, with normal breath sounds. The left border of the heart could now be outlined 10 cm. to the left of the midsternal line. The heart sounds were unchanged. Fluoroscopic and radiographic examination of the chest was repeated, and the left lung was seen to be almost completely reexpanded, with a resultant shift of the mediastinum back to its normal position (fig. 3). There was an area of pneumothorax on the left behind the aneurysm (fig. 4).

November 3 the patient was in good condition, with no recurrence of his atelectasis.

COMMENT

It is obvious that in relieving this patient's atelectasis we have not brought about a change in his underlying condition, but we feel that we have prolonged his life, for he might have died as a result of persistent massive pulmonary collapse. Although the result in this case might be called somewhat startling, its value lies in demonstrating the possibility of using artificial pneumo-

14. Moorman, L. J.: Massive Collapse of the Lung with a Case Report, Ann. Int. Med. **3**: 1024 (April) 1930.
15. Schindler, J. A., and Gnagi, W. B., Jr.: Postoperative Pulmonary Atelectasis: Report of a Case Treated by Artificial Pneumothorax, Ann. Int. Med. **11**: 2276 (June) 1938.

thorax generally for massive collapse of the lung. The method is easy to carry out and mechanically rational. Since all patients with pulmonary atelectasis show increased negative intrapleural pressure, it seems likely that the cyanosis and dyspnea are due primarily to a displacement of the heart and great vessels and to an acute overdistention of the unaffected lung. In cases of atelectasis following abdominal operations, presumably resulting from bronchial obstruction, the marked increase of intrapleural negative pressure can serve only to draw the entire obstructing medium more firmly and deeply into the bronchus, thus perpetuating a vicious cycle. Introducing air into the pleural cavity serves to break the cycle, tends to push the mediastinum back to its original position and probably would enhance the expulsion of the obstructing medium (see Habliston's case of intrabronchial tumor expectorated on the second day following artificial pneumothorax).[10]

Mistakes.—An investigator who draws false conclusions early in his research may see the whole structure of the work topple, for here conclusions follow in sequence and an early fallacy affects all; moreover, his work is placed on record and is submitted to close and critical supervision. To a physician, mistakes, if not too frequent, are of little consequence—they are indeed inevitable; they do not shake self-confidence as they do in the case of the research worker.—Lewis, Sir Thomas: Research in Medicine and Other Addresses, London, H. K. Lewis & Co., Ltd., 1939.

PERFORATING ULCERS OF FEET, WITH OSSEOUS ATROPHY

IN A FAMILY WITH OTHER EVIDENCES OF DYSGENESIS (HARELIP, CLEFT PALATE): AN INSTANCE OF PROBABLE MYELODYSPLASIA

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AND
HOBART A. REIMANN, M.D.
PHILADELHIA

An arresting example of the influence of heredity in disease is the development of the same chronic pathologic process in two or more members of a family when they reach a specified age. The family in the two cases herein reported furnishes such an example.

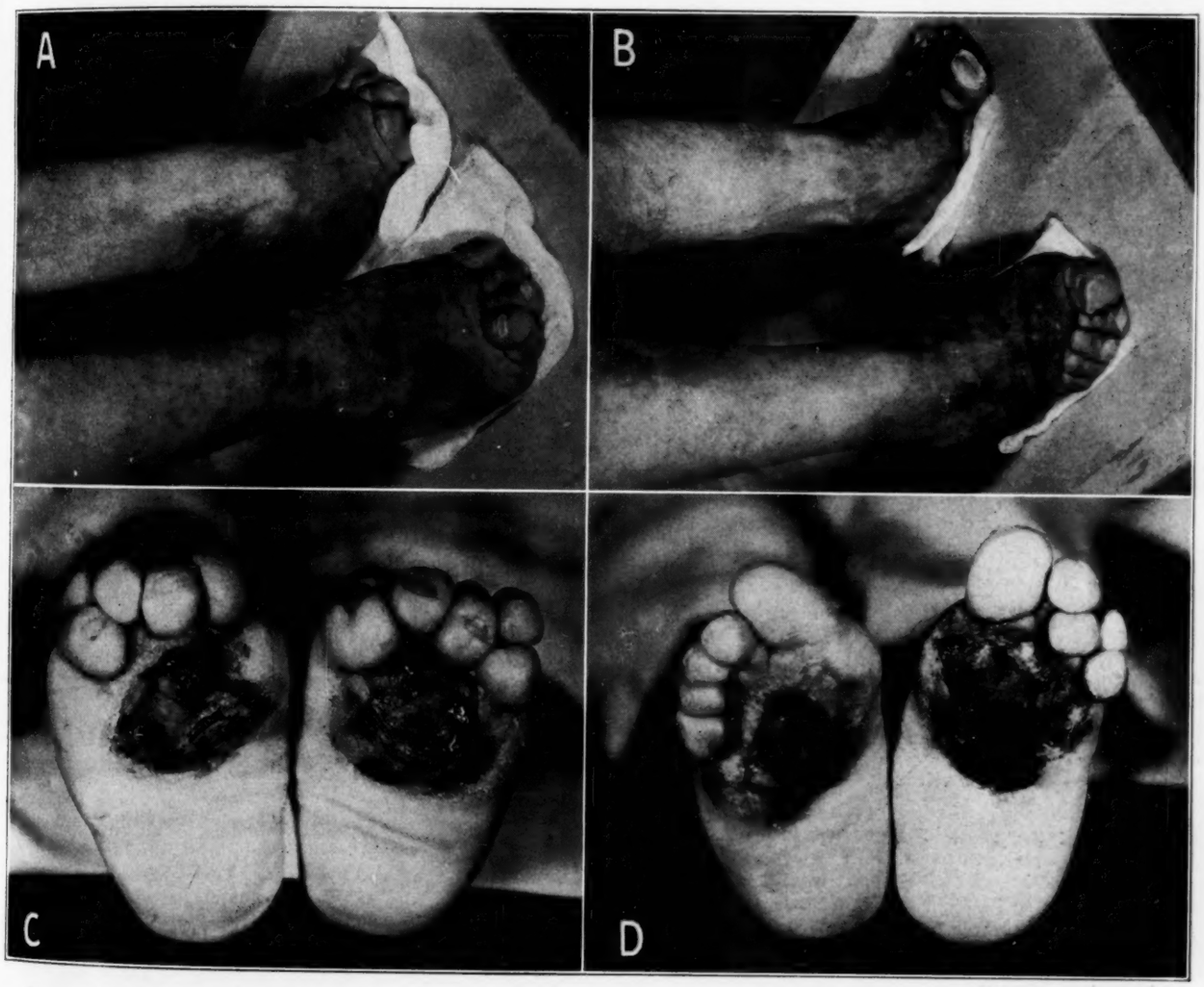

Fig. 1.—*A* and *C*, lateral and plantar aspects of the lower extremities of R. D.; *B* and *D*, similar aspects of the lower extremities of H. D.

In October 1937 Dr. J. Torrance Rugh of the department of orthopedics received a letter from two young men claiming that they "were very interesting cases" and would like to be studied and treated at this hospital. Through the courtesy of Dr. Rugh the patients, once admitted, were transferred to the medical service, where the following studies were conducted. Only the two principal cases will be dwelt on at length and simple mention made of relevant points in the histories of other members of the family.

Aided by a grant from the J. Ewing Mears Research Fund.
From the Department of Medicine, Jefferson Medical College and Hospital.

REPORT OF CASES

CASE 1.—*History.*—H. D., a white man, single, aged 27 (D-17 on the pedigree chart), with no occupation, at the age of 18 noticed a small blister which had appeared on the sole of the right foot followed within two weeks by one on the sole of the left foot. The blister broke down, an ulcer formed and enlarged and a piece of bone was extruded about a month after the onset. He wore at this time a size 5½ shoe. He could then distinguish between heat and cold on the skin of the feet but, as the process spread, sensation for pain, heat and cold disappeared; if he persisted in walking while sequestrums were extruding he felt some discomfort. The loss of sequestrums continued at about the rate of two bony spicules a month. The feet began to shorten and become rigid and apparently fixed at the ankle. At present if he does not use his feet for several weeks the ulcers eventually become smaller and heal over the entire surface; walking about for a few days, however, is enough to start the ulcerative process over again. The skin of the feet perspires excessively. His general health has been excellent and outside of this disability he has no other complaints. For a time he did amateur boxing, but the necessity of resting every few weeks to allow the ulcers to heal has restricted his activity considerably.

Examination.—The patient is an intelligent person with good general muscular development. In the mouth there is an overriding canine tooth on the left upper maxilla. Examination of the chest and abdomen is negative. There is slight cyanosis of the finger tips. Arm and forearm reflexes are prompt and active and sensation is normal. Distal to both knees there is a dusky pink, patchy discoloration and scaliness of the skin. The lower third of both legs, as well as both feet, are covered with fine perspiration. Both feet are short, in the anterior half especially, the toes appearing to spring directly from the middle portion of the foot without the intervening metatarsals (fig. 1 *B*). This gives the foot the appearance of a horse's foot ("pferd fuss" of Bruns). About the base of the first toe, the skin is folded over the invaginated toe. On the sole of each foot there is a punched out ulcer with a moist granulating base and sharply limited margins measuring 5 by 2 cm. on the right foot and 6 by 3 cm. on the left (fig. 1 *D*). The skin over both knees and on the soles is loose and wrinkled, more markedly on the left side. Both dorsalis pedis arteries are easily palpated, the pulse being full and forcible and apparently equal on the two sides. There are no muscular atrophies or contractures and the muscular strength is normal. There is hypesthesia to touch reaching almost anesthesia over the five toes bilaterally. Sensation of pinprick is almost lost over the feet and is felt more and more up toward the thighs, where it is still slightly impaired. Temperature sense (heat and cold) begins to be impaired just distal to both knees and is completely lost distally to the middle of both legs. Vibratory sense is intact, but the sense of position of the toes is lost. The corneal, laryngeal and pharyngeal reflexes are equal and active. The deep reflexes are equal and hyperactive (+4). The abdominal, cremasteric and achilles tendon reflexes are absent. There are no demonstrable pathologic reflexes or ankle clonus. Oscillometric readings are normal in both thighs and legs; in the feet they are above normal. The temperature, pulse and respiratory rates are normal. The basal metabolic rate is +11; urinalysis is negative; a blood count revealed 87 per cent hemoglobin, 4,810,000 erythrocytes and 11,900 leukocytes, with a normal differential count. Wassermann and Kahn reactions of the blood are negative. The blood sugar is 75 mg. per hundred cubic centimeters of blood, nonprotein nitrogen 24.4 mg., calcium 11.2 mg., phosphorus 3.7 mg. and phosphatase 3.8 mg.

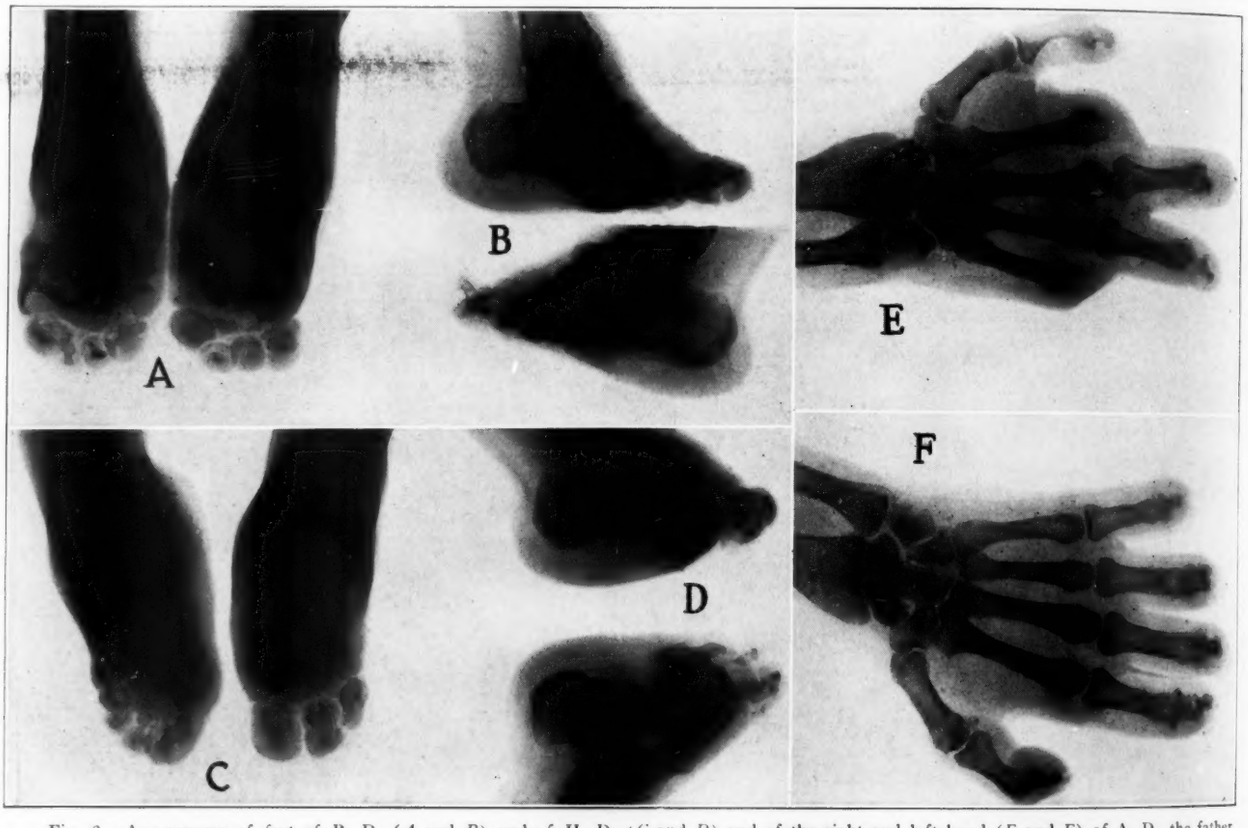

Fig. 2.—Appearances of feet of R. D. (*A* and *B*) and of H. D. (*C* and *D*) and of the right and left hand (*E* and *F*) of A. D., the father of the two boys.

Roentgenologic examination[1] revealed a spina bifida occulta involving the upper segment of the sacrum. When iodized oil was injected into the spinal canal, no obstruction to the flow of oil or any other abnormality was demonstrated. The bones of the skull have a normal appearance and so have the paranasal sinuses, clavicles, scapulas, ribs, lungs and the lumbar vertebrae, the bones of the pelvis, the radiuses, ulnas, carpals and all the phalanges of the fingers. The sella turcica is a little flattened.

The pelvis and calices of both kidneys as visualized by injection of a radiopaque substance are normal. Metatarsals and

1. The roentgenologic examinations were conducted under the direction of Dr. John Farrell. A neurologic examination of three of the patients was performed by Dr. J. C. McNerney.

phalanges are very much deformed and largely destroyed (fig. 2 *C* and *D*). The fibulas show a little roughening and thickening along their margins.

CASE 2.—*History.*—R. D., a man aged 24, single (D-18 on the pedigree chart), brother of patient 1, at the age of 17 noticed a small blister on the sole of his foot (he is uncertain which foot). It was soon followed by a blister on the other foot, ulceration and extrusion of sequestrums. The rest of the history is essentially the same as that of his brother.

Examination.—This patient is slightly thinner than his brother but of fairly good general development. There are no significant abnormalities in the head, neck, chest and abdomen except for a soft systolic murmur at the apical area of the heart. There is cyanosis and curving down of all finger nails and slight clubbing of the fingers. The skin of the lower third of the legs and feet has a dusky hue and is scaly and covered with beads of perspiration in the dorsum of the foot. The legs and feet (fig. 1 *A* and *C*) have, as a whole, an appearance almost identical with those of his brother. The plantar ulcer on the right foot measures 3.5 by 3.5 cm., while that on the left measures 5 by 5 cm. The dorsalis pedis pulses are full and bounding on both sides. There are no muscular atrophies or contractures, and the muscular strength is normal. Sensation to touch is lost over all the toes and is impaired up to a level just above the knees. There is hypesthesia to pinprick from a level about the union of the upper and middle thirds of the thighs distally, ending with almost anesthesia over the toes. There is complete loss of temperature sense over the distal two thirds of the leg and the entire foot. The vibratory sense, bone, position and deep muscle sense are intact. All reflexes are present except the achilles tendon reflex. The deep reflexes are all hyperactive. No reaction of degeneration is present in the muscles of the legs or feet. The temperature, pulse and respiratory rates are normal. The blood pressure is 120 systolic, 68 diastolic. Oscillometric readings are normal for both lower extremities. The basal metabolic rate is +10. The blood count is 78 per cent hemoglobin, 4,500,000 erythrocytes and 8,900 leukocytes, with a normal differential count. The Wassermann and Kahn reactions of the blood are negative. The blood sugar is 79 mg., nonprotein nitrogen 25 mg., calcium 11.5 mg., phosphorus 4.1 mg. and phosphatase 5.2 units. Urinalysis is negative.

Roentgen examination shows normal bones of the skull, the pelvis, hands, femurs, radiuses, ulnas, paranasal sinuses and thoracic and lumbar vertebrae. The sella turcica is a little smaller than usual. The metatarsals are much deformed and largely destroyed and there are only remnants of the phalanges (fig. 2 *A* and *B*). The fibulas show a little roughening and thickening along their margins as though there were some periosteal involvement. An intravenous urogram and the injection of iodized oil in the spinal canal yielded negative results. There was no evidence of spina bifida.

There is only one more brother in a family of twelve children; T. D., aged 22 (D-19), leads an active life and has no complaints except that his feet get cold easily during the winter. There are no physical abnormalities except in the lower extremities; the skin over the inner surface of both legs has scaly patches, and the toes of both feet have a dusky bluish discoloration, most marked in the right third and left great toes. There are five black blister-like areas with a cornified base over the right third toe, plantar surface of the right fifth toe and both first metatarsals, and over the dorsal surface of the fourth left toe. There is a fine perspiration over both great toes. The left foot is colder than the right. Pulsation of the dorsalis pedis artery is full and equal. Light touch is felt over the entire skin surface bilaterally. There is hypesthesia to pinprick starting from about 3 cm. above the ankle distally on both sides, most marked over the first, second and fifth toes. Temperature sense is lost over all the toes. Muscle, bone, vibratory and position senses are intact. Superficial and deep reflexes are present, active

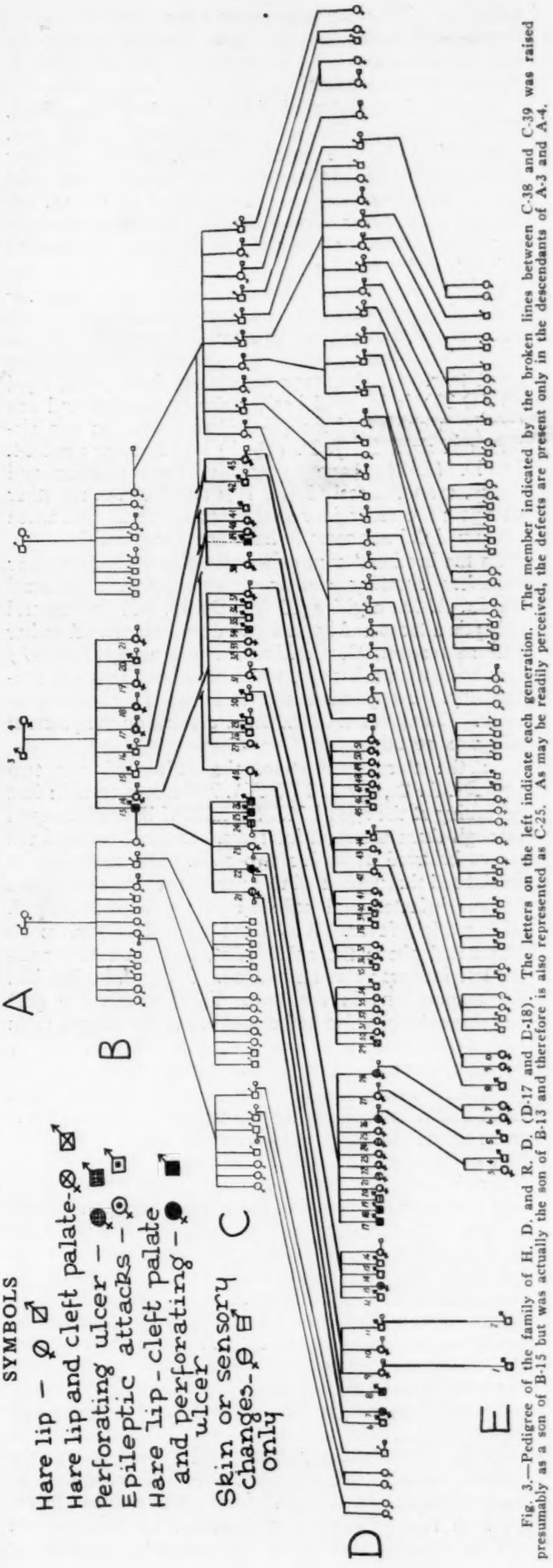

Fig. 3.—Pedigree of the family of H. D. and R. D. (D-17 and D-18). The letters on the left indicate each generation. The member indicated by the broken lines between C-38 and C-39 was raised presumably as a son of B-15 but was actually the son of B-13 and therefore is also represented as C-25. As may be readily perceived, the defects are present only in the descendants of A-3 and A-4.

and equal. The deep reflexes are all hyperactive (+ 4). Roentgenologic examination was negative except for the demonstration of a slight bifidity of the spine in the first sacral segment.

Of the nine sisters of these boys only one, E. S. (D-28) was known to have any ulceration of the feet. She died at the age of 25 of heart disease resulting from attacks of rheumatic fever. For six months before her death she had a large ulcer on the plantar surface of her toes similar to those on the feet of the two boys. Another sister, I. D. P., aged 30, married (D-26) had attacks of epileptic-like convulsions with transient loss of consciousness. Neurologic examination yielded negative results except for hyperactive deep reflexes and the presence of a small area of hypesthesia to touch and loss of temperature sense at the tip of the great toes. Of the seven remaining sisters, one, aged 23 (D-27) is in good health; she is married and has two boys one of whom (E-6) has a harelip; two sisters, one aged 15, J. D. (D-21) and another aged 14, M. D. (D-24) have hyperactive deep reflexes and dusky, cyanotic, scaly lower legs and feet but no other changes; the other four sisters are under 13 and when examined did not seem to have any abnormalities.

In the brothers' own generation there were no other members showing similar deformities. A paternal cousin, A. D., a girl aged 16 (D-13), had had several epileptic attacks and hyperactive deep reflexes. Another paternal cousin, G. D. McG., a girl aged 15, (D-7) was born with a harelip, which was later repaired successfully. At present she still has four deciduous teeth. Examination of the other cousins on the paternal side was negative.

In the third generation, the father of our two patients, A. D., aged 53 (C-26), had ulcers on both feet beginning at the age of 16. Spicules of bone discharged through these ulcers at intervals. In most respects the ulcers behaved as in his two sons. He continued to work hard throughout all this period; at times the ulcers became infected and cellulitis of the legs developed, with a high fever. At 35 the right foot had to be amputated above the ankle joint, and soon afterward the left foot was also amputated. All told, he has had six amputations in the lower limbs within the past ten years; he has also had ulcers in several fingers from which spicules of bone would extrude spontaneously or he would extract them himself with pliers. At the present time he has no index or little finger on the right hand and a few of the fingers appear shortened, as if some of the phalanges were missing. There is complete loss of temperature sense in the hands and forearms. There is marked hypesthesia in the hands extending up and gradually disappearing toward the shoulder. There is loss of temperature and pain sense below the knee to the end of the stump, which extends about 20 cm. below the knee and is ulcerated in several areas. On roentgenologic examination there is no evidence of spina bifida. The lumbar vertebrae and bones of the pelvis are normally developed. The distal and part of the middle phalanx of the fourth finger on the right hand are absent. Some changes are beginning to appear in the distal phalanx of the first finger of the same hand. In the left hand the distal phalanges of all fingers except the first and second are absent, and a good part of the middle phalanges are destroyed (fig. 2 *E* and *F*). The patient had a brother, C. D. (C-25), who also had ulcers on both feet from early adolescence and died at the age of 31 of diabetes. In the pedigree chart he is represented as a brother of A. D., though he was brought up as a son of A. D.'s paternal uncle. This accounts for the designation in the broken line of C-39 in figure 3. If C. D. had been a son of B-15 it would have been the only instance of the defect being transmitted through nonaffected parents. All members of the family who were interviewed were emphatic, however, in saying that C. D. was actually A. D.'s brother on his father's side, though born of a different mother. A younger brother of the father of our patients, D. D., aged 51 (C-24), has never suffered from any ulcerations; a physical examination of this man disclosed, however, definite impairment of the temperature and touch sense in a small area on the plantar and medial sides of the great toes, and hyperactive deep reflexes. All of this man's five children are in good health with the exception of one daughter, A. D. (D-13).

Of the three sisters of the father of our patients, one is apparently normal in every respect, her children and grandchildren also being normal. Of the other two, one A. D. McG., aged 42 (C-21), has hyperactive deep reflexes and small areas of loss of temperature and touch sense in the big toes. The other sister, L. D. J., aged 46 (C-22), is the only patient in the group who has all the defects. She was born with a harelip and complete cleft palate. For the past six years she has had several ulcers on the plantar surface of the left big toe and on the sole of the same foot. The ulcers are not as large as those of her nephews, but they have many of their external characteristics; they have healed and broken out several times in the past few years. Her deep reflexes are hyperactive and there is hypesthesia to touch, in some places amounting to anesthesia, with almost complete loss of temperature sense over all the toes and the plantar surface of the left foot and up to a point just below the ankle. In the right foot similar changes were noted, but over a more restricted area. She had only one child. This baby (D-8) was born with a harelip and complete cleft palate and died soon after birth.

In the second generation the only member of the family affected was T. D. Jr. (B-13), who died at the age of 42, the paternal grandfather of our two patients. According to information obtained from his wife, T. D. Jr. was the youngest in a group of nine children and the only one who had the disease. The ulcers on his feet began also in late adolescence and progressed to the point at which he had to have several toes and later both feet amputated. The man's wife states that just previous to the birth of her husband his father had contracted a venereal disease which she blamed for her husband's defect and accounted for the fact that previously born brothers and sisters had neither inherited nor transmitted the defect. T. D. Jr. had a sister, L. D. C., aged 70 (B-14), who had a baby (C-34) born with a harelip.

Of the first generation little is known. Our two patients and their grandmother had been told that our patients' great grandfather, T. A. D. (A-3), died at about the age of 80 and that just before he died gangrene of the feet developed. Up to that time, however, he had had no ulcers of the feet.

COMMENT

Tabes dorsalis, leprosy, syringomyelia and spina bifida occulta were considered as possibilities in the differential diagnosis. The strongly hereditary nature of the disease, the uniform date of onset, the absence of a positive history of contact and the negative sero-

logic examinations seem to exclude syphilis and leprosy from consideration. Though there are several instances of the appearance of syringomyelia in several members of one family, the fact that the disturbances first began in the lower extremities and the regularity of the age at which the onset of the disease took place seem to constitute points in favor of the hypothesis that the disturbance was due to an insufficiency or defect in the formation of the central nervous system rather than to an abnormal proliferation of neoplastic tissue in the cord. The trophic disturbances found in syringomyelia are so similar to those found in cases of spina bifida occulta that only the actual demonstration of the spina bifida can establish the diagnosis. All efforts made in that direction with our patients and their nonaffected relatives yielded, with one exception, a negative result. The exception (H. D., D-17 on the pedigree chart) did have, as shown by a roentgenogram, a spina bifida occulta; his brother, though similarly affected, did not have it. Such mild defects are, according to roentgenologists, too frequently noted in normal persons to warrant attaching much importance in this instance as being connected with the actual cause of the disease.

There are three outstanding features of this group of cases: (*a*) the hereditary trait, (*b*) the appearance of certain of the manifestations at about the same period of life and (*c*) the occurrence of developmental defects other than plantar ulceration in persons of the same family. One of the earliest reports of this condition is that by Bruns,[2] who described it as a familial symmetrical gangrene and arthropathy. The father and mother of the family he reported were over 70 years old and both healthy. There were five children, four boys and one girl. All were affected except the first born, a boy. The onset in all the affected children was at the same age, 17, with ulcers on the soles of both feet. Bruns attributed the trophic ulcers to a chronic progressive process in the lumbosacral region of the spine or in the cauda equina. One of his patients died as a result of infection but there was no autopsy.

The cases reported by Price[3] and Smith[4] are other examples of the same disturbance. Riley[5] reported a family in which there were several members, male and female, suffering with recurring ulcers of the feet appearing first at adolescence. In this family the mother was apparently the transmitter of this condition and more than half of her children, male and female, were affected.

Riley discusses at length the differential diagnosis between syringomyelia and myelodysplasia, a term advanced by Fuchs[6] to designate the clinical syndrome characterized by deformities of the feet with trophic and vasomotor disturbances, changes in the skin, spina bifida and syringomyelic sensory disturbances as well as other defects. The same condition has been described by Bremer[7] under the name "status dysraphicus" to indicate a disturbance in the closure mechanism of the primitive neural tube. In the group of defects listed by Bremer are also sternal malformations, kyphoscoliosis and other developmental anomalies. The association of harelip and cleft palate with trophic defects of the feet, present in our group, has not been recorded previously so far as we know; it fits well with the conception that the underlying disturbance must be referred to an embryologic maldevelopment. As pointed out by Riley,[5] syringomyelia is usually marked by a slow insidious progress with involvement and destruction of the ventral horn cells adjacent to the intramedullary neoplasm, while the syndrome of myelodysplasia presents a more static state of affairs with less evidence of progress, the outstanding disturbances being associated with trophic and vasomotor control. A differentiation between the two conditions from the clinical point of view may be impossible, and a description of pathologic changes in the cord in these cases is still wanting. Though familial and hereditary features are not uncommon in syringomyelia, they are not as outstanding as in the few reported cases of myelodysplasia.

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6. Fuchs, Alfred: Ueber den klinische Nachweis kongenitaler Defektbildungen in den unteren Rückenmarksabschnitten ("Myelodysplasia"), Wien. med. Wchnschr. **59**: 2142 and 2262, 1909.

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SUMMARY

Trophic and vasomotor disturbances with dissociated sensory changes, usually of the lower and sometimes of the upper extremities, were found in most of the male and in a few of the female members of a family some of the members of which also had harelip and cleft palate. The trophic changes first became apparent as a perforating ulcer of the feet and began at about the same age. The syndrome seems best attributed to an organized dysgenesis of the central nervous system of the type described by Fuchs under the term myelodysplasia.

THE CLINICAL APPLICATION OF TESTOSTERONE

WALTER M. KEARNS, M.D.

MILWAUKEE

The milestones along the march of knowledge of the testicular hormone were marked in 1849 by Berthold's[1] injection of testicular tissue into capons, with production of the secondary male characteristic of comb growth; in 1889 by Brown-Séquard's[2] attempt at rejuvenating himself by injection of crude watery extracts of dog or guinea pig testes; in 1911 by Pezard's[3] intraperitoneal injection into capons of crushed hog testes, with the production of comb growth; in 1927 by McGee's[4] injection of alcoholic extract of the lipoid fraction of bull testes and its detection in a five day assay on capons; from 1930 to 1938 by the development of a method for the extraction of androgens from the urine with quantitative assay on

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Read before the annual meeting of the State Medical Society of Wisconsin, Sept. 15, 1938, at Milwaukee.

The testosterone propionate for this study (oretone and oretone ointment) was supplied by the Schering Corporation.

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4. McGee, L. C.: Biological Activity of Testicular Extracts, Ph.D. Dissertation, University of Chicago, 1927. The Effect of the Injection of a Lipoid Fraction of Bull's Testicle in Capons, Proc. Inst. Med. Chicago **6**: 42, 1937.

capons by Koch, Gallagher, Domm and Womack;[5] in 1931 by Butenandt's[6] extraction from the urine of androsterone in pure crystalline form; in 1935 by the preparation by Laqueur and his co-workers[7] of testosterone, the form in which the hormone occurs in the testes, and in 1935 by the observation by Laqueur and his co-workers[8] of the still unidentified substance, an acidic and fat-soluble substance which appears in the testes, the adrenals and the urine and has the property of greatly activating testosterone. The identification of the x substance may be an important step in the advancement of therapy with androgenic hormones.

During the past three years several investigators have isolated and prepared a large number of androgens. Koch[9] listed over thirty androgenic substances which had been described, all closely related and similar structurally to the estrogens and cholesterol.

Until two years ago the results in male hormonal substitution were unsatisfactory. It is true that some temporary relief had been recorded at San Quentin prison after Stanley's[10] injection of testicular mush into the musculature of the anterior abdominal wall,

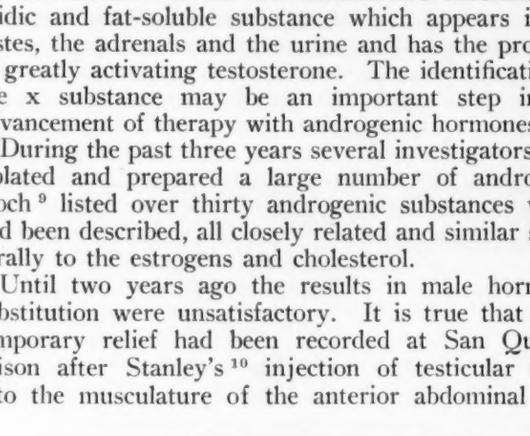

Chart 1.—The curves indicate the comb growth in two series of five capons which received injections of two different extractions of androgens from a six day specimen of urine from a normal student. The specimen was equally divided into two parts. With one part Koch's method was used, acid hydrolysis with a minimum of heat followed by benzene extraction in the new Koch apparatus (upper curve, 31.7 capon units a day). With the other half, extraction with dibutyl ether was employed (lower curve, 14.3 capon units a day). A comparison of the curves indicates the higher yield obtained with the benzene method.

but the procedure was never widely accepted. Nor was the isolation of testosterone from the bull's testicle of any great clinical help, since there is little storage of hormone in the tissue and only minute amounts are extractable. The yield is so small that it would require the rendering of 100 bull testicles for the daily maintenance of one castrate. Not until the recent commercial production of testosterone has an effective method been available.

Since the isolation and identification of testosterone and the perfection of a method of synthesis by degradation of sterols, the hormone has been placed on the market by several drug houses. Some esters of testosterone have been proved to be more potent and more prolonged in their effect than the free hormone. Testosterone propionate is the combination offered by the manufacturers.

The advent of these potent preparations has resulted in exaggerated claims and theories which expand beyond the limits of reasonable speculation. The medical literature is already being cluttered with premature reports demonstrating a lack of knowledge that may result in confusion on the part of the physician attempting to gain an understanding of a most complicated and profound problem. Koch's[9] thorough review of the subject of male hormones is a most exhaustive and enlightening treatise. It is well worth reading by all physicians.

MATERIALS AND METHODS

During the past ten months my associates and I have made an experimental study of testosterone and testosterone propionate. With the aid of Dr. Joseph Bock, professor of biochemistry at Marquette University Medical School, we have been able to make extractions of urine for androgenic activity for various types of patients, including castrates and patients with postpubertal cryptorchidism. Extractions and assays were made before and after treatment with testosterone administered by injection and by inunction. In recent extractions the ingenious method of Koch, in which benzene is used as the extracting agent, has been closely followed. In our hands benzene has proved to be the best solvent and the Koch still a most efficient method (charts 1 and 2). Assays have been made by injections into capons or by the application of an alcoholic extract to the capon's comb and recorded in terms of international capon units. More recently assays have been made by the colorimetric method described by the Callows and Emmens[11] and by Oesting.[12] The Oesting colorimeter has been adopted.

INDICATIONS

Caution in the choice of patients must be exercised, as the possibility of overstimulation and glandular imbalance must be kept in mind. Testosterone must not be injected indiscriminately into every knave who aspires to emulate the sex behavior of the cock or the squirrel. Because of the possibility of the later atrophy of the testicles, long periods of treatment of adolescent boys and young men must be avoided unless clinical evidence of hypogonadism and low urinary output of the androgens has been demonstrated.

CASTRATES

Six castrates were recalled from my past practice and that of two other urologists, Dr. Warren Leaper and Dr. James King. These patients had previously made the rounds of several physicians and received the usual

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futile ministrations with orally administered and injected preparations, ending in despair. They were broken men—nervous, apprehensive, depressed, unable to concentrate and devoid of libido, with pale sallow thin wrinkled skin—bearing their crosses tenaciously but at best barely able to hold part time positions. True to form, these patients had had definite shrinkage in the size of their prostate glands, in some instances to such a degree that the gland was indiscernible by digital rectal examination.

Basal metabolism tests, tests for blood cholesterol, Aschheim-Zondek tests with assay of the urine for gonadotropic substance and sugar tolerance tests were repeated periodically. Originally these patients deviated in varying degrees from the normal, with a lowered basal metabolic rate, increased dextrose tolerance and a lowered blood cholesterol content. The Aschheim-Zondek test has not been positive in a single instance. A sufficient number of recent tests to indicate any decisive changes have not yet been completed.

The most sensitive clinical indicators of testicular function are the seminal vesicles and the prostate gland. Carl R. Moore,[13] Callow and Deanesly[14] and McCullagh[15] have called attention to the prompt atrophy of the prostate after castration. Experimentally, in castrated male animals the administration of androgenic agents elicits a prompt response in the increase in size of the atrophic prostate and seminal vesicles.

The injection of testosterone propionate produced a change in the patients as definite and pleasing as anything in my experience. Ten mg. administered twice weekly has completely rehabilitated them. With two, injections of 5 mg. twice weekly were sufficient. Increased strength and endurance, a desire to expand their work, the appearance of libido, erections, ejaculations, ability to copulate and an increase in the growth of the beard have all been observed in their return to normality. After from three to six weeks the prostate gland regenerates perceptibly, and it approaches the normal size in from six to eight months. One very religious patient, working as an orderly in a local hospital, threatened to discontinue treatment because of the appearance of annoying erections, and he would have deserted had it not been for the concomitant appearance of well-being and ability to work without extreme exhaustion. Foss[16] reported that a castrate while receiving 140 mg. of testosterone in a week acquired priapism which was unrelieved by intercourse but abated several days after the dose had been diminished.

TESTOSTERONE IN OINTMENT

About six months ago, on the suggestion of Dr. Carl R. Moore[17] of the University of Chicago, testosterone as an inunction was employed with castrates. Moore[18] has more recently reported on the potency of androgenic substance applied to the skin of animals.

Three of the castrated patients and two patients with cryptorchidism who were given testosterone ointment (each centimeter containing 2 mg. of free testosterone) have reported excellent results, at least equal to the effect obtained with injections. With the application of 2 cc. each day the dose applied to the skin was somewhat more than the injected amount. The total average weekly dose administered to the castrates was 20 mg. by injection and 28 mg. by inunction. Patients are directed to rub the ointment vigorously for twenty minutes into a hairless area of skin, preferably on the anterior abdominal wall. The application is made each day at bedtime.

Corroborating the good clinical outcome, proof of the absorption of the substance by the human skin was obtained through the demonstration of increased androgenic activity in the urine (chart 3).

The potency of many drugs administered through the skin by inunction is well known to the physician. Through the ages the treatment of syphilis rested mainly on the mercurial inunction because of its proved

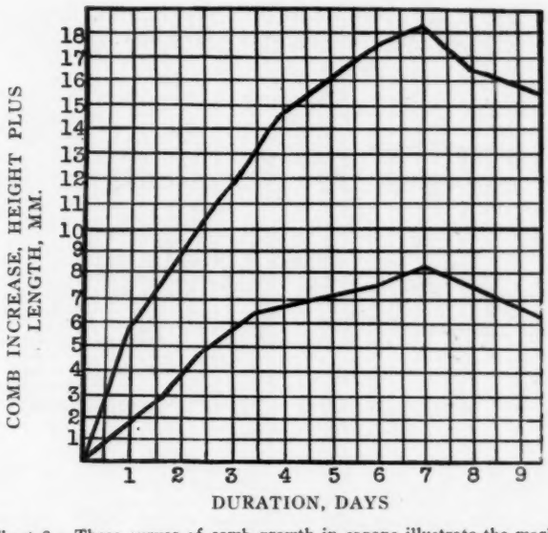

Chart 2.—These curves of comb growth in capons illustrate the markedly diminished excretion of androgens in an elderly patient with melancholia and prostatic hypertrophy (lower curve, 5.3 capon units a day) as compared with the excretion of a normal student (upper curve, 37.3 capon units a day). In each case the extraction was performed on a five day specimen of urine. Testosterone propionate injected in 25 mg. doses markedly alleviated the mental symptoms in the patient.

prompt and prolonged therapeutic action. As evidence of absorption of the mercurial through the intact skin, toxic gingival, intestinal and renal manifestations frequently developed when proper reserve was not exercised in its administration.

Macht[19] has recently reported the result of a long and careful study on the absorption of drugs and poisons through the skin and mucous membranes. He commented on the sound rationale underlying many of the older therapeutic procedures employing inunction, pointing out the benefits and dangers as well.

The problem in substitution therapy with testosterone is to arrange the administration so as to imitate the steady continuous activity of the normal glands and avoid alternation of deficiency and wasteful excess of the hormone. In an ointment the hormone is slowly and continuously available to the body. It is possible that this method of administration of androgens may have wide-

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spread acceptance. At any rate, for patients who have difficulty in reaching the physician it offers an effective form of treatment.

POSTPUBERAL CRYPTORCHIDISM

Two patients with postpuberal cryptorchidism, 23 and 32 years of age, have been treated. In both there was retarded development of the secondary male characteristics associated with atrophy of the testicles. Each patient had the appearance of a boy of 16 years, with small face, slender build, high pitched voice and no hair on the face or in the axillae, with typical eunuchoid bodily form, with full hips and girdle distribution of fat, and with arm span greater than body height. The patient of 32 had a small amount of pubic hair. The penis was less than 2 inches in length and of very small caliber. After one year of treatment with antuitrin-S no change was observed. The patient married during this course of treatment and his efforts at intercourse were unsatisfactory. Eight months ago treatment with testosterone propionate was instituted in injections of 25 mg. twice weekly. The penis enlarged remarkably and in six months had more than doubled its size. Intercourse with well defined orgasm is now being carried out three times weekly in a gratifying manner. The

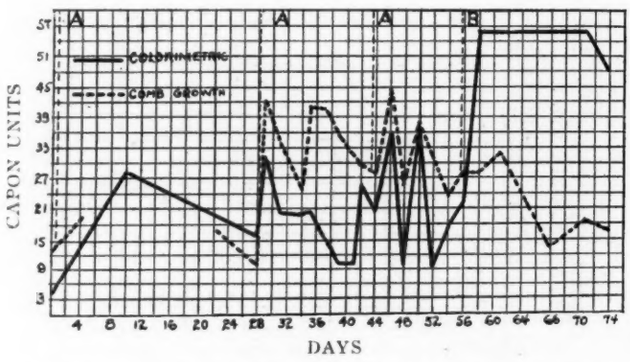

Chart 3.—A comparison of the results obtained in assaying, in duplicate, twenty-three urinary extractions, part of each extract by the colorimetric method and another part of each extract by capon comb growth response after topical application. *A* indicates 50 mg. of testosterone and *B* testosterone ointment. The extractions were made on twenty-four hour urinary specimens from a eunuchoid collected at intervals during a seventy-four day period. The broken line charts the results in terms of average comb factor increase following five daily applications of alcohol solution of extract to the comb of two capons. Each extraction of the androgenic substance was made up to 20 cc. in 70 per cent alcohol, and 3 cc. of this was applied daily for five days, a total of 1.5 cc., or 7.5 per cent of the total extraction, applied to each capon comb. The average percentage increase of comb factor (factor = the square root of the length multiplied by the height of the comb in millimeters) was recorded except on the tenth day, when the containing vial was broken. The solid line charts the results on the same extracts obtained by colorimetric assays translated into international capon units. Note the parallelism between the colorimetric assay and the comb growth response beginning on the first day before treatment was started and the continuance of the parallelism through the period when several intramuscular injections of 50 mg. each of testosterone crystals were made. With the institution on the fifty-fourth day of inunction treatment (8 mg. of testosterone a day) a wide deviation occurred, with apparently the presence of substance in the urinary extracts producing a much greater change in the colorimetric readings than in the capon comb response. The decrease in the output of androgens during the last three days of observation, recorded in both methods of assay, was caused by the omission of treatment every other day.

other patient, 23 years of age, has experienced a similar good result. In both patients the prostate gland has grown appreciably and axillary hair and a small amount of hair on the upper lip have appeared. The experience of Riches [20] and more recently that of Vest and Howard [21] demonstate the need of larger maintenance doses for this type of patients, approximately double the dose used for castrates. Kenyon administered 25 mg. of testosterone propionate intramuscularly from five to seven times weekly for from twenty-eight to ninety-five days to four eunuchoids.[22] Thereafter three of them received from 10 to 25 mg. from three to seven times weekly, with interruptions for 152, 108 and 160 days respectively. In all instances there were an early increase in the frequency of erections and a marked increase in the size of the prostate as early as the twelfth day. The penis elongated from 1 to 2 cm. in all but one case. Changes in the hair of the face, pubis and thighs and deepening of the voice occurred promptly with the large dose used. Moreover, Kenyon observed nitrogen and sodium retention and a slight increase in the body weight.

Twenty-five mg. twice weekly proved in our cases to be the minimal dose for maintenance of well-being and continuance of gradual improvement.

A larger dose of ointment is also required for eunuchoids. Four cc. of ointment (2 mg. per cubic centimeter) is applied daily. The total weekly dose reaches approximately 56 mg. of testosterone, which compares with the injected dose of 50 mg. a week. While the response to either method of administration occurs less promptly than in the castrate, the effect is no less definite. In fact the objective sign of penile growth offers a definite indicator of the effect. A reduction of dose results in a less satisfactory clinical course.

In this type of patient, as in the castrate, there is an unquestionable indication for endocrine therapy, because unmistakable deficiency is recognizable clinically and the reassuring response to treatment is readily observed. In these two groups the effect of testosterone may be truly called rejuvenation. The physician may now humanely corral and treat with testosterone these morbid semi-invalids with as much precision as he would use in treating with insulin patients with advanced diabetes. Testosterone may not contain all the components of testicular secretion, but it does control dramatically some processes associated with its deficiency.

SUMMARY

1. In castrated patients and in those with hypogonadism due to cryptorchidism the administration of testosterone brings about an effective substitution.

2. Beneficial results have been obtained through the intramuscular injection of testosterone propionate and equally good results through the inunction method with free testosterone in a greaseless base.

238 West Wisconsin Avenue.

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21. Vest, S. A., Jr., and Howard, John Eager: Clinical Experiments with the Use of Male Sex Hormones: I. Use of Testosterone Propionate in Hypogonadism, J. Urol. **40:** 154 (July) 1938.

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Men of First-Rate Ability.—There are questions which concern the elucidation of disease and its processes in man which are among the hardest that human intelligence and endeavor have to answer. Clinical Science especially requires, for the solution of its many and varied problems, men of first-rate ability. To the younger generation the opportunities now offering, the security that is assured, are of a kind undreamt of a few years ago. The days are passing when a worker was inevitably forced away from the work of his choice to find his livelihood in practice. The time is approaching very nearly to us when it will be impossible for men spending long years in the successful solution of problems in Clinical Science to fail to draw around them at least a few eager young workers from their own teaching institutions, when it will be impossible for them to remain isolated intellectually, and surrounded only by students preoccupied by more directly practical pursuits and interests.—Lewis, Sir Thomas: Research in Medicine and Other Addresses, London, H. K. Lewis & Co., Ltd., 1939.

EFFECT OF VITAMIN K ON THE CLOTTING TIME OF THE PROTHROMBIN AND THE BLOOD

WITH SPECIAL REFERENCE TO UNNATURAL BLEEDING OF THE NEWLY BORN

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PART 1

The desirability of finding some agent which might materially lessen the incidence of cerebral accident and unnatural bleeding in the neonatal period prompted this study of the effect of vitamin K concentrate on the prothrombin-clotting time and the clotting time of the blood of the newly born. Before presenting our results it seems advisable to review briefly the history of vitamin K concentrate.

During work on sterol metabolism in the chick, Dam [1] in 1929 observed that diets deficient in certain respects gave rise to a disease which closely resembled scurvy. In this disease spontaneous bleeding occurred in the affected animals, clotting time was markedly prolonged and the plasma prothrombin was reduced to extremely low levels. Later he and his co-workers [2] suggested that this condition, which failed to respond to ascorbic acid administered either orally or subcutaneously, was a deficiency disease brought about by exclusion from the diet of a certain antihemorrhagic factor which he termed vitamin K. This substance was found to be fat soluble and to occur in the easily soluble nonsterol fraction of unsaponifiable matter. Hog liver fat and alfalfa proved to be excellent sources for the substance, which in solubility and heat resistance appeared to be somewhat akin to vitamin E. Marked differences between this vitamin, however, and other known vitamins were apparent. These workers [3] also reported methods of concentrating and assaying this new antihemorrhagic factor.

Somewhat later, but independently, Almquist and his associates [4] described the same hemorrhagic disease in the chick and, in addition, developed a method of concentrating the antihemorrhagic factor contained in alfalfa meal. A quick method of assay was then reported by them,[5] and shortly thereafter a clear, colorless, crystalline substance containing one or more benzene rings and having a potency eight times that of the fraction remaining in the solution was isolated.

Clinical trial of extracts rich in so-called vitamin K naturally followed closely in the wake of experimental work. Hawkins and Brinkhaus [6] in their work on the cause of bleeding in dogs with bile fistulas found the plasma prothrombin markedly decreased in these animals and expressed the belief that the low prothrombin level was responsible for the hemorrhagic propensity. They found that the feeding of bile, with a sufficient diet, would increase the plasma prothrombin and that afterward the bleeding ceased.

Butt, Snell and Osterberg [7] of the Mayo Clinic reported striking results in the use of vitamin K and bile in the treatment of the hemorrhagic diathesis in cases of obstructive jaundice. Dam and Glavind [8] also reported favorable results in such cases but predicted that purpura and hemophilia, as well as other allied conditions in which the plasma prothrombin content is not lowered, would not respond to such therapy, a suggestion which has since been borne out.

The modus operandi of vitamin K in increasing the plasma prothrombin has not yet been elucidated. It is assumed that the product is absorbed by the intestinal tract in the presence of bile (it being fat soluble), but nothing is yet known concerning its metabolism after assimilation. The fact that bile is necessary for its absorption, however, accounts for the inability of a patient stricken with obstructive jaundice to absorb the vitamin; hence the low prothrombin content of the plasma. Both Dam and Almquist have observed that vitamin K can be produced by bacterial action in the intestine, and this appears to be the explanation for the failure of certain animals to acquire hemorrhagic disease though fed on a diet deficient in vitamin K.

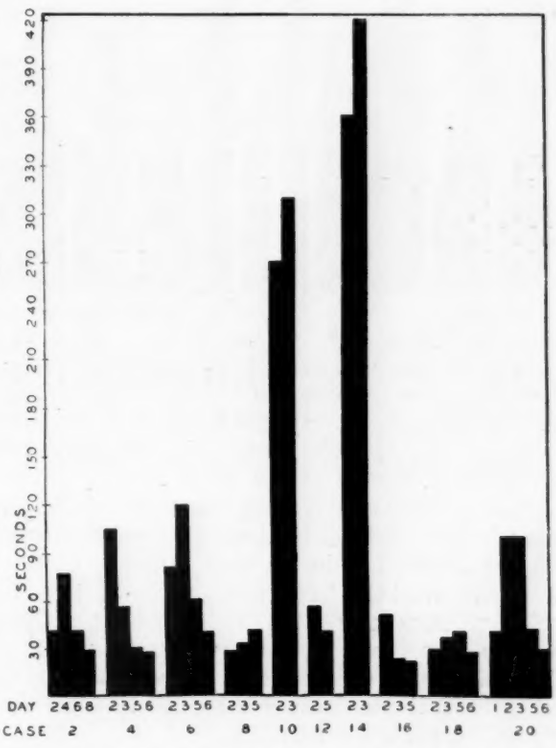

Chart 1.—Prothrombin-clotting times for the control infants.

From the Department of Pediatrics, University of Virginia Department of Medicine.

1. Dam, Henrik: Biochem. Ztschr. **215:** 475, 1929; **220:** 258, 1930.
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5. Almquist, H. J., and Stokstad, E. L. R.: Assay Procedure for Vitamin K, J. Nutrition **14:** 235 (Sept.) 1937.
6. Hawkins, V. B., and Brinkhaus, K. M.: Prothrombin Deficiency, Causes of Bleeding in Bile Fistula Dogs, J. Exper. Med. **63:** 795-801 (June) 1936.
7. Butt, H. R.; Snell, A. M., and Osterberg, A. E.: The Use of Vitamin K and Bile in the Treatment of the Hemorrhagic Diathesis in Cases of Jaundice, Proc. Staff Meet., Mayo Clin. **13:** 74 (Feb. 2) 1938.
8. Dam, Henrik, and Glavind, Johannes: Vitamin K in Human Pathology, Lancet **1:** 720 (March 26) 1938.

In this work we employed the method devised by Quick and his co-workers [9] for determining the prothrombin-clotting time. This method has been used by Snell, Butt and Osterberg [10] of the Mayo Clinic in their work on the hemorrhagic diathesis in jaundice, and it is their belief that, while it is a relatively simple procedure, it is accurate within practical limits and, as the

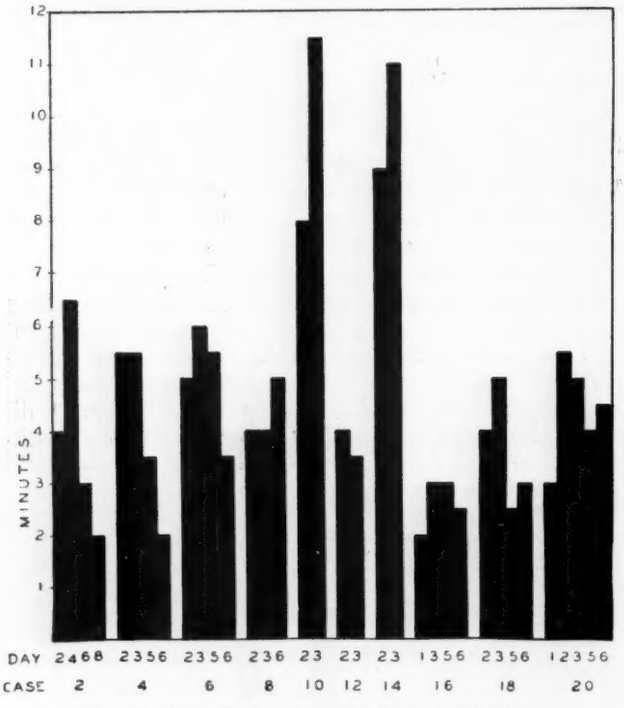

Chart 2.—Blood-clotting times for the control infants.

originators contend, a very good index of the prothrombin level, since this time varies inversely with the prothrombin content of the blood.

Brinkhaus, Smith and Warner [11] have found the prothrombin level of the newly born to vary considerably in different infants and in the same infant at different ages. These workers have further shown that for normal newly born infants the prothrombin values vary from 14 to 39 per cent of the level found for normal adults, while in a case of hemorrhagic disease the prothrombin level was extremely low, in fact less than 5 per cent of the adult norm.

With this work in mind it seemed logical to believe that vitamin K, which so materially affects the prothrombin level in jaundiced patients, might conceivably be effective in raising the prothrombin content of the newly born infant's blood and thereby prevent both spontaneous hemorrhage or that initiated by the trauma of labor. It is but a step further to postulate, should this be effective, that birth trauma may be minimized by administering this substance to the mother either before or shortly after labor has set in.

Twenty newly born infants served as subjects for the first part of this investigation. For ten control infants the prothrombin-clotting time and the clotting time of the blood were determined at varying intervals during the first week of life. To ten other infants vitamin K concentrate [12] was administered orally, at the end of twenty-four hours 1 cc., at the end of forty-eight hours 0.5 cc. and at the end of seventy-two hours 0.5 cc. The clotting times of the blood and the prothrombin were determined at intervals identical with those of the controls, the capillary tube method being used.

In all cases the prothrombin-clotting time was determined according to the method of Quick, blood specimens being obtained from the anterior longitudinal sinus. All such determinations were done by Dr. O. R. Kelly of the department of clinical laboratories of the University of Virginia Hospital.

Because of the meager knowledge concerning the prothrombin content of the blood of the newly born and the even more meager knowledge concerning the prothrombin-clotting time, it was necessary to establish our own controls. Although we had only ten, we obtained significant information from them. Chart 1 shows the prothrombin-clotting rate at various intervals in the first week of life for the ten control infants.

It seems obvious (1) that the blood of newly born infants differs markedly as regards the prothrombin-clotting time, unusually high rates being common, (2) that the blood of individual infants varies markedly on different days of life as regards the prothrombin-clotting time, (3) that the blood of certain infants is peculiarly deficient in prothrombin as determined by the prothrombin-clotting rate and that the period of most marked deficiency is between the ages of 48 hours and 72 hours and (4) that after the fifth day the rate tends to fall to an apparently common level. The last fact strongly suggests a relationship between hemorrhagic disease of the newly born and the prothrombin content of the blood, in that hemorrhagic disease rarely occurs after the fifth day of life, the time at which

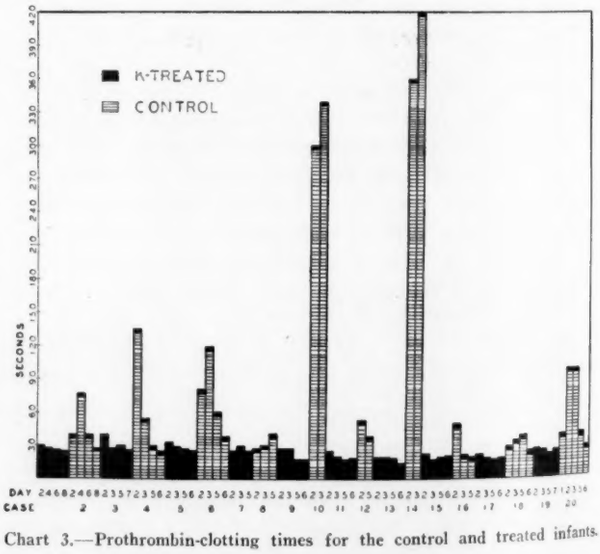

Chart 3.—Prothrombin-clotting times for the control and treated infants.

the prothrombin-clotting rate of the control infants appeared to approach a common level.

Chart 2 shows the blood-clotting time at various intervals in the first week of life for the ten control infants. All time intervals conform with those employed in the determinations of the prothrombin-clotting times. It seemed obvious (1) that the blood

9. Quick, A. J.; Stanley-Brown, Margaret, and Bancroft, F. W.: A Study of the Coagulation Defect in Hemophilia and in Jaundice, Am. J. M. Sc. **190:** 501-511 (Oct.) 1935.

10. Butt, H. R.; Snell, A. M., and Osterberg, A. E.: Further Observations on the Use of Vitamin K in the Prevention and Control of the Hemorrhagic Diathesis in Cases of Jaundice, Proc. Staff Meet., Mayo Clin. **13:** 753-764 (Nov. 30) 1938; footnote 7.

11. Brinkhaus, K. M.; Smith, H. P., and Warner, E. D.: Plasma Prothrombin Level in Normal Infancy and in Hemorrhagic Disease of the Newborn, Am. J. M. Sc. **193:** 475 (April) 1937.

12. The vitamin K concentrate used in this study was furnished by the Abbott Laboratories and is now available for general use.

of newly born infants differs markedly as regards the clotting time, (2) that the blood of individual infants varies markedly on different days of life as regards the clotting time, (3) that the highest clotting times occur at from 48 hours to 72 hours, (4) that no high clotting times are encountered after the sixth day of life and (5) that as the prothrombin-clotting time rises or falls so does the blood-clotting time rise or fall. This fact may well explain the high clotting time of the blood in hemorrhagic disease of the newly born.

In chart 3 the prothrombin-clotting times for ten control infants are staggered with the prothrombin-clotting times for ten infants treated with vitamin K. It is a significant and striking fact that no unusually high rates were observed for the latter infants and no unusual daily variation. In fact the highest rate encountered for these infants was 40 seconds. Apparently vitamin K concentrate will markedly lower the prothrombin-clotting time in the first few days of life and maintain it at a safe and surprisingly common level.

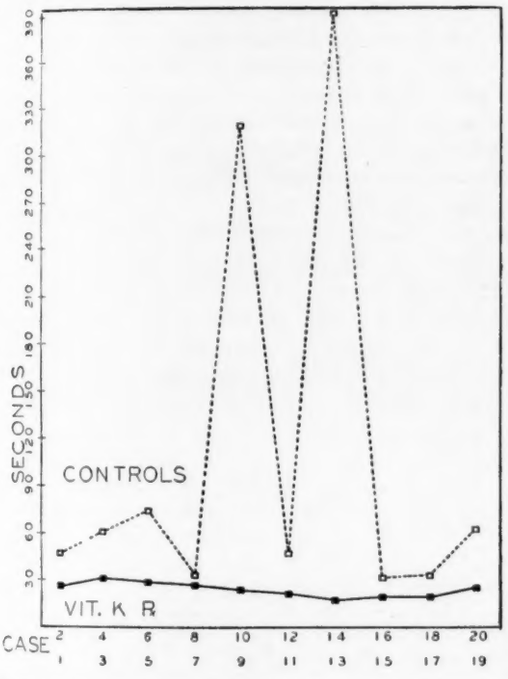

Chart 4.—Average prothrombin-clotting times for the control and treated infants.

In chart 4 the mean prothrombin-clotting times of the ten control infants are plotted in the form of a curve and a similar curve is plotted for the ten infants treated with vitamin K. The low level for the treated infants and the very even curve are most apparent.

We do not know what should be considered a safe prothrombin level. Butt, Snell and Osterberg in their report concerning the use of vitamin K in the preparation of certain patients with jaundice for operation said that a prothrombin-clotting time of more than thirty seconds was an indication for vitamin K therapy and a ten second fall in the rate evidence of a decided effect of vitamin K. The dramatic effect of this vitamin possible in the newly born would seem to be but the expression of a real need for prothrombin occurring at this age. It is not difficult to see why some of the control infants might have bled when subjected to the trauma of labor and delivery, and it is not difficult to see why spontaneous hemorrhage occurs at this age. On the other hand, it seems unlikely that spontaneous hemorrhage will occur in any infant receiving vitamin K and having prothrombin-clotting rates such as those recorded here.

In chart 5 the clotting times of the blood for the ten control infants are staggered with the clotting times of the blood for the ten infants treated with vitamin K. The generally lower level of the clotting time of the treated infants is apparent, with none of the daily variations so noticeable for the controls.

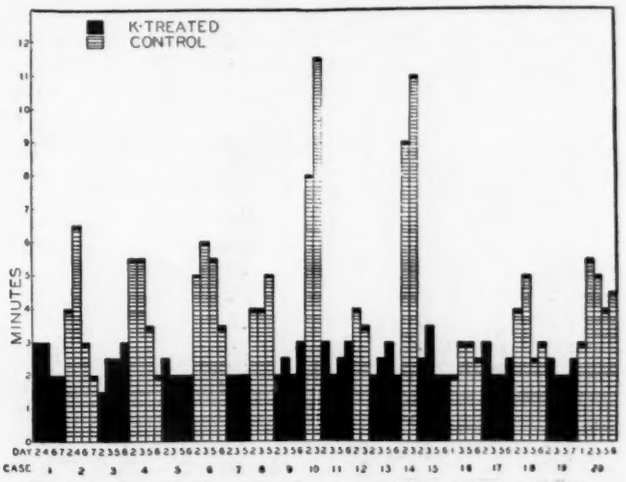

Chart 5.—Blood-clotting times for the control and treated infants.

The mean blood-clotting times of the ten controls and of the infants treated with vitamin K are expressed in curves in chart 6. The generally lower clotting time and its strikingly common level for the treated infants is very evident. Apparently vitamin K concentrate will consistently lower the clotting time of the blood in the first few days of life and maintain it at a common lower level. It is hard to visualize spontaneous hemorrhage

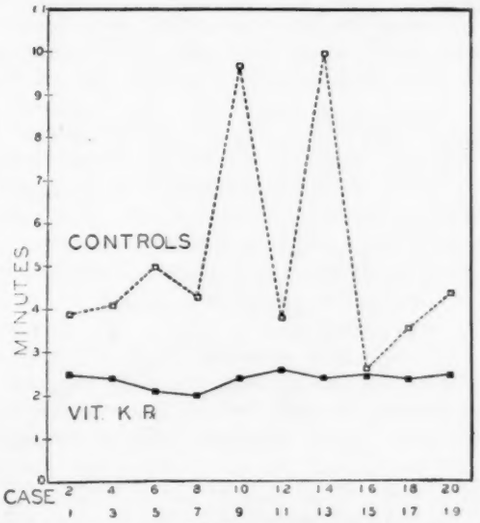

Chart 6.—Average blood-clotting times for the control and treated infants.

in the treated infants, with clotting times markedly lower than the supposed clotting time of the normal newly born infant.

The rapidity with which vitamin K concentrate reduces the prothrombin-clotting time and the blood-clotting time in a suitable case is remarkable, as shown in the following history:

CASE 1.—T., a baby girl, was born in the University of Virginia Hospital Feb. 12, 1939, of a syphilitic mother who had

received suitable treatment. At the time of the baby's birth, the mother's Wassermann reaction was negative. The infant appeared normal in every respect and the weight was 2,770 Gm. On the afternoon of February 15, the third day of life, the prothrombin-clotting time was found to be five and one half minutes and the coagulation time eight minutes. Two cc. of a concentrate rich in so-called vitamin K was administered by mouth. Two hours later the prothrombin-clotting time had dropped to forty seconds and the coagulation time from eight minutes to five minutes. Throughout the hospital stay the prothrombin-clotting time and the blood-clotting time remained consistently low, and on the seventh day the former was twenty-four seconds and the latter three minutes (chart 7).

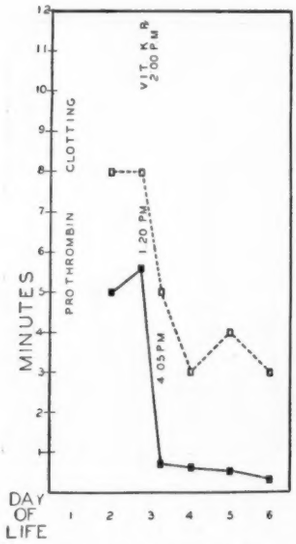

Chart 7.—Clinical data in case 1.

COMMENT

The whole subject of unnatural bleeding at the time of birth and in the first week of life is in a very confused state. No satisfactory classification of hemorrhage occurring at this time is available. This confusion has largely to do with what is or is not hemorrhagic disease of the newly born, at best only a clinical syndrome rather than a disease entity.

Because of its frequency and disastrous consequences, intracranial hemorrhage originating at the time of labor and delivery causes the greatest concern. We have always felt that trauma played only a secondary role in normal labor and delivery and that certain infants possess an inherent tendency to bleed under the stimulus of moderate trauma. Unusually high prothrombin-clotting and blood-clotting times may well account for such unnatural bleeding tendencies. Certainly symptoms and signs of intracranial hemorrhage frequently are not observed until many hours after delivery, and this suggests slow hemorrhage from a small bleeding point. The presumptive and factual evidence presented in this report suggests that vitamin K concentrate if administered immediately after birth may serve to check such bleeding and render harmless a slow oozing hemorrhage, which otherwise might well cause death or permanent mental and physical crippling.

In the prevention and treatment of spontaneous hemorrhage, concealed or apparent, associated with a high prothrombin-clotting and blood-clotting time and appearing within the first week of life, vitamin K concentrate should prove effective. The following case is presented as further factual evidence that vitamin K concentrate will check unnatural bleeding associated with a prolonged prothrombin-clotting and blood-clotting time.

CASE 2.—D., a baby girl born Feb. 12, 1939, in the University of Virginia Hospital, weighed 3,345 Gm. and appeared normal in every respect. On the second day after birth at 3:30 p. m. blood was removed from the longitudinal sinus. The prothrombin-clotting time was found to be six minutes. Blood from a puncture wound of the heel showed a clotting time of nine minutes. Slow oozing from this wound lasted for twelve hours. At 9:30 the following morning puncture of the fontanel was again done, and the prothrombin-clotting time was found to be seven minutes and the blood-clotting time eleven minutes. Two cc. of a concentrate rich in so-called vitamin K was administered by mouth. One and one half hours later the prothrombin-clotting time had dropped from six minutes to fifty-five seconds and the blood-clotting time from eleven minutes to four minutes. Oozing from the puncture wound of the heel ceased promptly after administration of vitamin K. Throughout the hospital stay the prothrombin-clotting time and the blood-clotting time remained consistently low, and on the seventh day the former was twenty-three seconds and the latter three minutes (chart 8).

We are unable to suggest what may be the effect of vitamin K on hemorrhage not associated with a high prothrombin-clotting time and blood-clotting time. It seems unlikely that any beneficial effects will result, since the disturbance in such cases appears not to be a matter of the clotting of blood but rather a change in the walls of small blood vessels which renders them permeable so far as their contents are concerned. In our experience cases of this nature are rare.

There would seem to be important surgical significance in the facts presented in this report. In view of the high prothrombin-clotting and blood-clotting times so commonly encountered in newly born infants, it would seem wise to administer vitamin K before any contemplated surgical operation at this age period. This simple precaution should greatly lessen the chance of unpleasant and serious bleeding at the time of and after operation. Even the simple operation of circumcision has at times been associated with serious and even fatal hemorrhage.

Believing as we do that trauma plays only a secondary role in many of the cases of intracranial hemorrhage associated with apparently easy and normal labor, we are engaged in a study to determine whether or not vitamin K administered to the mother before and after the onset of labor will materially affect the prothrombin-clotting time and the blood-clotting time in the newly born infant. The results obtained so far in this uncompleted investigation are most encouraging and will be published in the near future. If the prothrombin-clotting time and the blood-clotting time of the infant can be lowered by administration of vitamin K to the mother, the therapeutic application suggests vast possibilities. If the desired effects cannot be obtained through the mother by oral administration, it seems not unlikely that a preparation of vitamin K suitable for intravenous use will be available. At least one study is under way which has for its object the production of a suspension or colloidal solution for intravenous use.

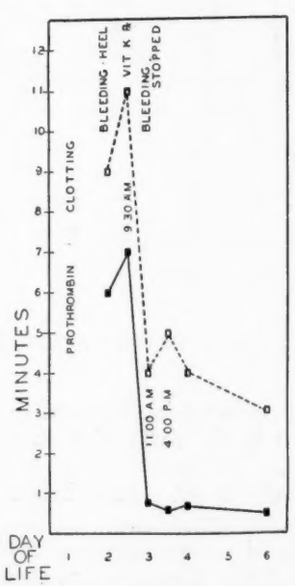

Chart 8.—Clinical data in case 2.

It is hardly necessary to stress the necessity of finding some means whereby the incidence of intracranial hemorrhage occurring at the time of birth may be materially lessened. Concerning this important subject we quote from Grulee and Bonar.[13]

13. In Brenneman, Joseph: Practice of Pediatrics, Hagerstown, Md., W. F. Pryor Company, Inc., vol. 1, chapter 42, p. 59.

We see, therefore, that of the deaths of the newborn, between 25 and 40 per cent may be attributed to intracranial hemorrhage, and that the number of cases of intracranial hemorrhage in maternity hospitals varies with the hospital but that it is probably as frequent as 1 to 25 or as low as 1 to 150 deliveries. If we were to estimate the number of deaths in the population at large from any one disease, or type of injury, we would be appalled to find that it occurred as frequently as 1 to 150 individuals.

This statement does not take into account the large army of mental and physical cripples who were so unfortunate as not to die as a result of their cerebral accident. A relatively short trial in any large lying-in hospital should prove or disprove the suggested therapeutic value of vitamin K concentrate and its possible effect on the present unhappy picture.

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STUDIES IN BLOOD PRESERVATION

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I. REPARTITION OF POTASSIUM IN CELLS AND PLASMA

Dulière [1] reported in 1931 a constant enrichment in the serum potassium of blood kept in contact with cells over a period of days.

The manifestations of potassium poisoning have been well known since Blake's [2] observation in 1840. The symptoms in both cold [3] and warm [4] blooded animals have been reported. Such poisoning is not peculiar to the animal kingdom, for alterations in the concentration of potash in certain plant cells or in the mediums in which they live profoundly affect many of their normal reactions.[5]

Because of this, an investigation of the loss of potassium from cells and its increase in the plasma, as one of the abnormalities of stored blood, was felt necessary. An investigation seemed doubly imperative on account of the recent rapid rise of "blood banks," together with the growing conviction that blood kept too long is dangerous, as judged by an occasional severe reaction, a greater incidence of post-transfusion jaundice and an occasional unexplained death.

Normally human red cells contain twenty times as much potassium as there is in the plasma. It is the chief mineral base of cells. Naturally factors altering this distribution would make available an ever increasing amount of potassium in the serum of preserved blood.

FIRST SERIES

The first group of experiments was designed to check Dulière's statement. Two samples of the same human venous blood were collected with aseptic precautions and kept in pyrex flasks stoppered with cotton, in the dark, in a refrigerator at 4 C. in the following manner:

EXPERIMENT 1.—The blood, 250 cc., was kept under liquid petrolatum.

EXPERIMENT 2.—The blood, 250 cc., was mixed with 2.5 per cent solution of sodium citrate in sufficient quantity to make a mixture containing 0.31 Gm. per hundred cubic centimeters of blood.

At the same time a 5 cc. sample was mixed with heparin (Connaught) in a centrifuge tube and spun for one hour. This served as the sample for base line determinations.

Portions of the serum or plasma were pipetted off at twenty-four hour intervals for five days and then at approximately weekly intervals for a month. With each analysis, material for culture was taken and streaked on blood agar plates. These were observed for growth at the end of twenty-four and forty-eight hours.

Potassium determinations were done by the argenticobaltinitrite modification [6] of the method of Kramer and Tisdall,[7] the final colorimetric readings being made on the Evelyn photoelectric colorimeter.[8] The value given is the mean of two aliquots. Cell volume was determined by Sanford-Magath tubes spun for one hour at 2,000 revolutions per minute.[9] Specific gravity was measured by the method of Barbour and Hamilton.[10] The plasma protein content was calculated by the formula of Weech, Reeves and Goettsch.[11]

The following experiment is typical of the series as to method and results:

Dr. Drew is a Fellow in Surgery, Rockefeller Foundation.

This study was made possible by a grant from the Blood Transfusion Betterment Association.

From the Department of Surgical Pathology of Columbia University College of Physicians and Surgeons

Data presented at the Eleventh Annual Graduate Fortnight, the New York Academy of Medicine, Oct. 24-Nov. 4, 1938.

Owing to lack of space, this article has been abbreviated for publication in THE JOURNAL by the omission of several tables. The complete article appears in the authors' reprints.

1. Dulière, W. L.: Données expérimentales sur la répartition du potassium dans le sang extravasé; comparaison entre la concentration physiologique dans le plasma et la concentration dans le liquide céphalo-rachidien, Compt. rend. Soc. de biol. **108:** 416-418 (Oct. 23) 1931.

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EXPERIMENT 1.—*Blood kept under oil without a preservative.* The blood of the donor, Dr. J. S., was of group B.

Procedure.—In addition to the determinations, which served to provide basic values, made at the time of the bleeding, eight other sets of analyses were made, and the results were expressed in four ways (table 1):

1. Column 4; actually observed; serum potassium as milligrams per hundred cubic centimeters of serum.

2. Column 5; by calculation as milligrams of potassium in the serum of 100 cc. of blood. This figure for practical purposes gives at a glance the actual amount of serum potassium in every hundred cubic centimeters of blood on any given day when preserved in the stated manner.

3. Column 6; by calculation as milligrams of potassium given off into the serum by each hundred cubic centimeters of cells. This figure is theoretically more convenient for comparative purposes, as it obviates the differences created by bloods whose cell volumes may vary markedly from normal.

4. Column 7; as percentage of potassium which has diffused out of the cells.

TABLE 1 (experiment 1).—*Blood Kept Under Oil Without Preservative*

1	2	3	4	5	6	7	8
			Milligrams of Potassium				
			Observed Value per 100 Cc. of Serum*	Sum of Increments		Percentage of Cell Potassium Diffused Out	Hemolysis (Observed)
Date	Sample	Days		Per 100 Cc. of Blood	From 100 Cc. of Cells		
3/27/38	1	1	40.0	8.7	16.0	4.5	0
3/28/38	2	2	68.6	21.1	39.2	11.0	0
3/29/38	3	3	83.0	27.2	51.0	14.2	0
3/30/38	4	4	100.8	35.1	64.7	18.3	0
3/31/38	5	5	133.2	48.6	89.7	25.3	0
4/ 9/38	6	14	200.0	76.1	140.5	39.6	++++
4/15/38	7	20	206.4	78.6	145.2	40.9	++++
4/29/38	8	34	225.0	86.0	158.0	44.8	++++

* Values uncorrected for sample removed.

Each day's values represent the sum of the increments to that particular day, care being taken throughout to estimate the amount of potassium removed in the various test samples. At each sampling a note was made concerning the presence and degree of hemolysis.

Values.—

Basic Values: hematocrit reading, 54.3 per cent cells and 45.7 per cent serum; plasma potassium, 21 mg., whole blood potassium, 202 mg. and cell potassium (calculated), 354 mg., per hundred cubic centimeters; specific gravity of plasma, 1.0274, and plasma proteins, 6.87 Gm. per hundred cubic centimeters.

Calculation:

(*a*) For base line or zero values: blood sample, 250 cc.; serum volume, 250×0.457 (percentage of serum) $= 114.4$ cc.; determined serum potassium, 21 mg. per hundred cubic centimeters, and total potassium in original serum, 24 mg.

(*b*) For first day's increment: blood sample, 2 cc.; serum potassium (observed value), 40.0 mg. per hundred cubic centimeters; potassium in 2 cc. sample, 0.8 mg.; potassium in residual serum, $114.4 - 2 \times 0.4 = 45$ mg.; total potassium in serum after twenty-four hours, $45 + 0.8 = 45.8$ mg.; increase in total potassium in serum in twenty-four hours, $45.8 - 24$ (originally present) $= 21.8$ mg.; increase in serum potassium of 100 cc. of blood in first twenty-four hours, $21.8 \times \frac{100}{250 \text{ (cc.)}} = 8.7$ mg.; amount of potassium given off in first twenty-four hours by each hundred cubic centimeters of cells, $21.8 \times \frac{100}{250 \text{ (cc. of blood)} \times 0.543 \text{ (percentage of cells)}} = 16$ mg., and percentage of cell potassium diffused out into serum in first twenty-four hours, $\frac{16 \text{ (amount lost)}}{354 \text{ (original cell potassium)}} = 4.5$.

In a similar manner each day's results were determined and expressed as the sum of the increments.

Results.—These are shown in chart 1 and table 1.

In each of the two flasks there was a steady rise in the serum or plasma potassium. In the hematocrit tube, however, for the few days observed, the increment was less and suggested that either heparin was a markedly superior preservative or the slow diffusion was the result of some other factor.

In each instance there was discernible discoloration of the supernatant fluid by the fifth day and obvious gross hemolysis by the fourteenth.

The data in table 1 suggest that blood kept under oil at a constant temperature loses in the first week at least 25 per cent of its cell potassium, at the end of three weeks about 40 per cent and from that time on diminishing quantities. In more practical terms, such blood at the end of the first week contains in the serum of each hundred cubic centimeters of blood at least 50 mg. of potassium and any time after two weeks at least 75 mg., the amount gradually increasing.

SECOND SERIES

The second group of experiments was designed (1) to check the results of the first series, (2) to ascertain the effect of trauma (such as shaking) on the rate of loss of potassium from cells and (3) to see what effect the shape of the container had on the rate of diffusion. The blood of the donor, Dr. G. S., was of group O. Five hundred cc. of blood was collected and placed in three pyrex flasks.

EXPERIMENT 3.—The blood, 150 cc., was kept under oil without an anticoagulant.

EXPERIMENT 4.—The blood was placed in a Sanford-Magath hematocrit tube containing heparin and spun for an hour.

EXPERIMENT 5.—The blood, 150 cc., was mixed with 50 mg. of heparin.

EXPERIMENTS 6 and 6B.—The blood, 200 cc., was mixed with the usual sodium citrate solution.

These flasks were treated in a manner similar to the first set. The results are shown in table 2.

From the observed values, none of the anticoagulants prevented the loss of potassium from the cells. The rate of diffusion appeared a little slower in the citrated blood. There was a distinct difference in the heparinized bloods (chart 2), that in the container with the larger interface showing the more rapid diffusion. This indicates that the shape of the container and not the anticoagulant was probably the cause of the slow diffusion in the heparinized blood in the first series. Here again, agitation by vigorous shaking hastened the process of diffusion (chart 3).

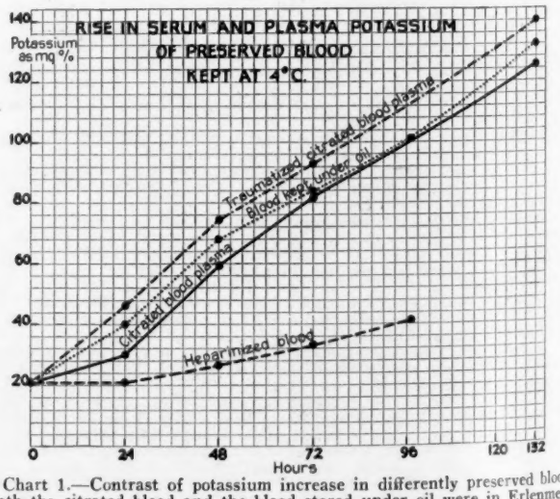

Chart 1.—Contrast of potassium increase in differently preserved bloods. Both the citrated blood and the blood stored under oil were in Erlenmeyer flasks. The heparinized blood was kept in a centrifuge tube. Data from experiment 1, table 1.

THIRD SERIES

In the third series four samples of fresh venous whole blood were preserved in 2.5 per cent solution of sodium citrate, 3 per cent solution of sodium citrate, Peyton Rous solution[12] and the Russian citrate solution.[13]

EXPERIMENT 7.—*Blood preserved in 2.5 per cent solution of sodium citrate.* The blood, from a professional donor, G. W., was of group O. To 125 cc. was added 17.5 cc. of 2.5 per cent solution of sodium citrate to give a mixture containing 0.31 Gm. per hundred cubic centimeters of blood. Each day a 2 cc.

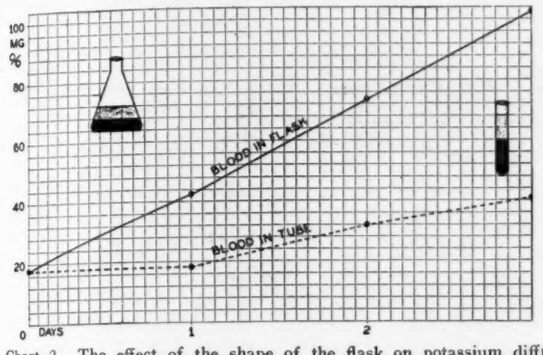

Chart 2.—The effect of the shape of the flask on potassium diffusion. Data from experiments 4 and 5, table 2.

sample was removed from the supernatant fluid without disturbing the cells and the potassium content determined as in experiment 1.

The results are tabulated in table 3 and graphically represented in charts 4 and 5.

EXPERIMENT 8.—*Blood preserved in 3 per cent solution of sodium citrate.* The donor was the same as in experiment 7 and the procedure was the same except that 15 cc. of a 3 per cent solution of sodium citrate in sterile water was used as the preservative for 125 cc. of blood. The gram percentages are exactly the same, 0.31.

The results are tabulated in table 4 and graphically represented in chart 5.

EXPERIMENT 9.—*Blood preserved in Russian citrate compound.* The blood of the donor, Dr. C. R. D., was of group O. Fifty cc. was added to an equal quantity of preservative made up according to the following formula: sodium chloride 7 Gm., sodium citrate 5 Gm., potassium chloride 0.2 Gm., magnesium sulfate 0.004 Gm. and distilled water 1,000 cc. The rate of diffusion was determined as in experiments 7 and 8.

The results are tabulated in table 5 and graphically represented in chart 5.

EXPERIMENT 10.—*Blood preserved in Peyton Rous compound.* The blood of the donor, Dr. J. S., was of group B. To 150 cc. was added 250 cc. of 5.4 per cent solution of dextrose in distilled water and 100 cc. of 3.8 per cent solution of sodium citrate. The high percentage of sodium citrate in this preservative contraindicates its use for transfusions; the cells, however, may be resuspended in saline solution and used. The results are shown in table 6 and chart 5.

SUMMARY, PART I

1. There is a daily increase in the amount of potassium present in the serum or plasma of whole blood kept in vitro under aseptic bacteriostatic conditions.

2. The transference of potassium from cells to plasma begins at the time of withdrawal from the blood stream. The rate is rapid at first and gradually diminishes.

3. The total amount found in the serum at the end of ten days reaches 25 per cent of the total potassium content of the red blood cells in the fresh state and at the end of thirty days may exceed 50 per cent.

4. The rate at which the potassium is given up by the cells is greatly increased by shaking.

5. The rate of potassium diffusion is evidently influenced by the shape of the container. The larger the interface area, the more rapid the diffusion (chart 2).

6. Hemolysis appeared at varying times in the different samples; none was present in the sample preserved in the Peyton Rous compound.

7. Changes observed in these experiments were not due to bacterial infection.

8. Sodium citrate in a mixture containing 0.31 Gm. per hundred cubic centimeters of blood is more effective as a preservative than the more complex Russian citrate compound.

9. The citrate-dextrose mixture of Peyton Rous prevents loss of hemoglobin from the cells but not loss of potassium.

II. A COMPARISON OF THE RATES AT WHICH CELLS LOSE POTASSIUM AND HEMOGLOBIN

In the third series of experiments, repeated attempts to measure accurately the small amounts of hemoglobin in the plasma of only slightly hemolyzed bloods were unsuccessful with the usual acid hematin methods such as those of Helige and Sahli. With the Pulfrich photometer, however, small daily increments were demonstrable with greater consistency. The method used is a modification of that described by Heilmeyer.[14] The content of hemoglobin may be calculated in grams per hundred cubic centimeters of plasma and then reexpressed as grams lost from the cells per hundred cubic centimeters of blood.

The potassium determinations were done as described in part I, the cultures on blood agar plates and the

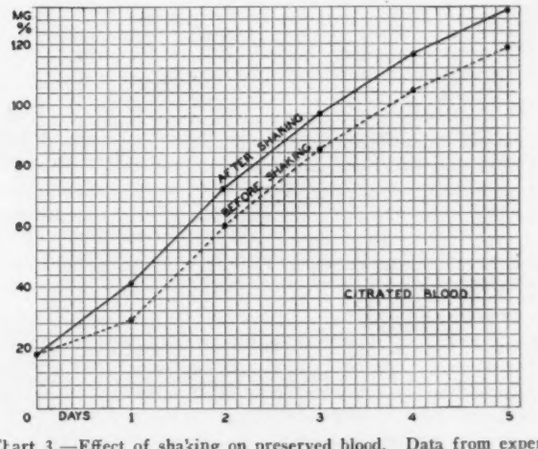

Chart 3.—Effect of shaking on preserved blood. Data from experiments 6 and 6B, table 2.

p_H determinations first by titration and then checked by means of a Helige glass electrode potentiometer which had been calibrated by buffers.

EXPERIMENT 11.—*Blood preserved in diluted Russian citrate compound.* The blood of the professional donor, J. F., was of group O.

Equal parts of blood and diluted preservative were mixed by adding 125 cc. of blood to 125 cc. of preservative which con-

12. Rous, Peyton, and Turner, J. R.: The Preservation of Living Red Blood Cells in Vitro: I. Methods of Preservation, J. Exper. Med. **23:** 219-237 (Feb.) 1916.

13. Goodall, J. R.; Anderson, F. O.; Altimas, G. T., and MacPhail, F. L.: An Inexhaustible Source of Blood for Transfusion and Its Preservation, Surg., Gynec. & Obst. **66:** 176-178 (Feb.) 1938.

14. Heilmeyer, Ludwig: Medizinische Spektrophotometrie, Jena, Gustav Fischer, 1933, p. 86.

tained 875 mg. of sodium chloride, 625 mg. of sodium citrate, 25 mg. of potassium chloride and 0.5 mg. of magnesium sulfate.[13]

The blood and the preservative were checked for initial p_H values, which were compared with the p_H of the mixture at the end of the experiment.

Hemoglobin determinations were done at the first suggestion of hemolysis. Cultures were taken at well spaced intervals.

The zero value used in determining the daily increments of hemoglobin was 40 mg. in the plasma from 100 cc. of blood. This quantity is our normal value for blood which has been centrifuged for one hour.

The basic values were as follows: hematocrit reading, 45.6 per cent cells and 54.4 per cent plasma; plasma potassium, 17.6 mg., whole blood potassium, 192.0 mg. and cell potassium (calculated), 400.0 mg. per hundred cubic centimeters; specific gravity of plasma, 1.0253; plasma proteins, 6.25 Gm. per hundred cubic centimeters; p_H of blood, 7.3 and p_H of preservative, 7.4

The results are tabulated in table 7.

EXPERIMENT 12.—*Blood preserved in sodium citrate and adrenal cortex extract.* The blood of the professional donor, J. F., was of group O. To 125 cc. was added 15 cc. of a 3 per cent solution of sodium citrate and 10 cc. of adrenal cortex extract, the mixture being treated like that of experiment 11.

TABLE 7 (experiment 11).—*Blood Preserved in Diluted Russian Citrate Compound*

		Milligrams of Potassium			Percentage of Cell Potassium Diffused Out	Mg. of Hemoglobin in Plasma per 100 Cc. of Blood	Culture (Blood Agar)
		Observed Value per 100 Cc. of Plasma	Sum of Increments				
Date	Days		Per 100 Cc. of Blood	From 100 Cc. of Cells			
9/23/38	1	19.2	9.7	21.2	5.3	..	0
9/24/38	2	26.3	20.5	44.9	11.2	..	..
9/25/38	3	27.8	22.8	50.0	12.5	..	..
9/26/38	4	37.3	37.0	81.0	20.3	..	..
9/27/38	5	40.1	41.4	90.0	22.5	..	0
9/28/38	6	47.7	52.3	114.7	28.7	..	..
9/30/38	8	50.3	56.1	123.0	30.7	..	..
10/ 2/38	10	53.6	60.9	133.5	33.4	..	..
10/ 4/38	12	60.9	71.4	156.5	39.1	..	..
10/ 6/38	14	67.5	80.7	177.0	44.3	..	..
10/ 8/38	16	74.1	90.0	197.4	49.3	..	0
10/10/38	18	80.1	98.4	215.8	54.0	..	..
10/12/38	20	81.9	100.8	221.0	55.3	0.7	..
10/14/38	22	84.0	103.8	227.5	56.9	193.0	..
10/16/38	24	92.7	115.7	253.7	63.4	341.0	..
10/18/38	26	100.3	126.0	276.0	69.0	533.0	0
10/20/38	28	106.5	134.3	294.6	73.6	692.0	..
10/22/38	30	107.3	135.4	296.8	74.2	813.0	..
10/24/38	32	109.0	137.7	302.0	75.5	1,172.0	..
10/31/38	39	111.0	140.2	307.5	76.9	1,708.0	..
11/ 7/38	46	123.0	155.5	342 0	85.4	2,242.0	..
11/14/38	53	128.3	162.3	356.0	89.0	3,157.0	0
11/18/38		$p_H = 7.31 \pm 0.05$ as determined by glass electrode					

The basic values were the same as in experiment 11 except that the p_H of the mixture of sodium citrate and adrenal cortex extract was 7.3.

The results are tabulated in table 8 and graphically represented in chart 6.

EXPERIMENT 13.—*Blood preserved in undiluted Russian citrate compound.* The blood of the professional donor, J. F., was of group O. The procedure was similar to that of experiment 11 except that only one half the quantity of preservative was used and no distilled water was added. The 12.5 cc. of preservative contained 312.5 mg. of sodium citrate, to make a mixture containing 0.228 Gm. per hundred cubic centimeters of blood. The results are shown in table 9.

EXPERIMENT 14.—*Blood preserved in Grey's buffered solution.* The blood of the professional donor, J. F., was of group O. The procedure was the same as that in experiment 11 except that 112.5 cc. of blood was used and 12.5 cc. of preservative prepared according to Grey.[15] The results are shown in table 10.

Table 11 shows at a glance the difference in rates of hemolysis in the four types of preservative. The increases of each are expressed in grams in the plasma of 100 cc. of blood and then as percentage of hemoglobin lost from the cells.

Table 12 expresses the percentage loss of potassium from cells.

The information gained shows that none of the preservatives prevented an increase in plasma potassium,

TABLE 11.—*The Difference in Rates of Hemolysis*

(Samples collected Sept. 22)		Experiment 11; Diluted Russian Citrate Compound Hemoglobin in Plasma		Experiment 12; Solution of Sodium Citrate and Adrenal Cortex Extract Hemoglobin in Plasma		Experiment 13; Undiluted Russian Citrate Compound Hemoglobin in Plasma		Experiment 14; Grey's Buffered Solution Hemoglobin in Plasma	
Date	Days	Gm.	Per Cent	Gm.	Per Cent	Gm.	Per Cent	Gm.	Per Cent
10/12/38	20	0.001	0.005	0.078	0.52	0.115	0.76	0.025	0.17
10/14/38	22	0.175	1.17	0.094	0.63	0.164	1.09	0.078	0.52
10/16/38	24	0.344	2.29	0.190	1.27	0.259	1.73	0.116	0.77
10/18/38	26	0.524	3.49	0.254	1.69	0.354	2.36	0.164	1.09
10/20/38	28	0.684	4.56	0.376	2.51	0.477	3.18	0.238	1.59
10/22/38	30	0.812	5.41	0.502	3.35	0.651	4.34	0.342	2.28
10/24/38	32	1.150	7.67	0.716	4.77	0.981	6.54	0.436	2.91
10/26/38	34	1.319	8.79	0.802	5.35	1.133	7.55	0.508	3.99
10/28/38	36	1.488	9.92	0.888	5.92	1.285	8.57	0.760	5.07
10/30/38	38	1.697	11.31	1.223	8.15	1.493	9.95	1.061	7.07
11/ 7/38	46	2.236	14.91	1.674	11.60	2.105	14.03	1.463	9.75
11/14/38	53	3.135	20.90	2.151	14.34	3.526	23.50	1.673	11.15

and of the preservatives analyzed sodium citrate functioned best. The blood kept under oil manifested the same changes. The reason underlying the mechanism of potassium loss is obscure; the finding of an increase in ammonia may prove significant.

Amberson[16] has shown that hemoglobin itself is not toxic to the vertebrate body if it has been freed from stromas, and if the solution was properly balanced infusions containing from 12 to 14 per cent caused no abnormal reaction. The quantities present in the plasma of the most hemolyzed bloods under our observation have not approached this figure.

TABLE 12.—*Percentage Loss of Potassium from Cells; Comparison of Different Preservatives*

Days	2.5% Solution of Sodium Citrate	3% Solution of Sodium Citrate	Russian Citrate Compound	Peyton Rous Compound	Diluted Russian Citrate Compound	Solution of Sodium Citrate and Adrenal Cortex Extract	Undiluted Russian Citrate Compound	Grey's Buffered Solution
7	18.7	18.8	23.1	19.0	30.5	20.4	26.2	28.1
14	32.8	28.7	40.9	37.2	44.3	34.1	38.2	42.3
21	44.3	40.8	60.0	44.2	56.1	51.7	49.5	53.3
30	48.7	44.7	66.0	53.4	74.2	62.3	58.1	61 2

These potassium levels were confirmed in the laboratory of Dr. Robert F. Loeb on samples submitted Oct. 4, 1938.

SUMMARY, PART II

1. The erythrocytes of preserved blood lose potassium at different rates, depending in part on the type of preservative. This loss begins before the diffusion of hemoglobin. Hence the degree of hemolysis cannot be used as an index of potassium loss.

2. A high degree of potassium diffusion may be present in the complete absence of hemolysis (table 7).

III. THE TOXICITY OF POTASSIUM

With the observed increase of potassium in the plasma of stored blood, a reinvestigation of the toxic action of this base was deemed necessary.

15. Grey, Temple: Buffered Citrate Solution in Blood Transfusion, Lancet **2**: 1431 (Dec. 18) 1937.

16. Amberson, W. R.: Blood Substitutes, Biol. Rev., Cambridge Philosophical Soc. **12**: 48-86, 1937.

The literature on the subject is abundant,[17] and some of the lethal doses are tabulated in tables 13 and 14.

Six years after Blake's [2] discovery that injections of potassium caused cardiac arrest in dogs, Bouchardat and Stuart-Cooper [18] in a series of fifty experiments established the lethal doses for fish, frogs, fowl, dogs and rabbits. Although this work was done in 1846,

TABLE 13.—*Lethal Doses of Potassium (Gustav Bunge, 1871)*

Animal	Weight Kg.	Dose, Gm.	Salt	Time of Death	Authority
1. Introduced into Stomach					
Rabbits	...	3	KCl	30 min.	Guttmann
		1.6-4	KCl	40-70 min.	Bunge
Dogs	6	16-20	KCl	1 hr.	Podkopaew
		48	KNO_3	1½ hrs.	Orfila
2. Subcutaneous Injection					
Rabbits	...	1-1.5	KCO_3, KCl, KNO_3	15-20 min.	Guttmann
	1.2	4			
	2.0		KCl, KNO_3	47-355 min.	Falck
	1.2	3	KCl	1½ hrs.	Bunge
Cats	...	8	KCl	1¼ hrs.	Bunge
3. Intravenous Injection					
Rabbits	...	0.23	KCl	Immediate	Grandeau
Dogs	...	0.3	KNO_3	Immediate	Traube
		1-1.5	KCl	Immediate	Grandeau
		0.1	KCl	Immediate	Bunge
		0.6-1	KCl	.....	Podkopaew
4. Intra-Arterial Injection					
Dogs	...	1.5	KCl	.....	Podkopaew

the conclusions are valid today, namely that the toxic action of potassium depends on the mode of administration, the rate of injection, the amount of potassium in the salt used and the individual resistance of the animal.

Concerning the toxicologic effects of potassium there are many contradictory data, owing in part to the choice of the animal. There is, however, fairly uniform agree-

TABLE 14.—*Lethal Intravenous Doses of Potassium (Since Bunge)*

Year	Authority	Animal	Salt	Mg. of Potassium per Kg.
1881	Feltz and Ritter	Dog	KCl	48
1883	Bochefontaine	Dog	KCl	100
1892	Dogiel	Dog	KNO_3	20
1906	Bouchard and Oliver	Dog	KCl	39.90
1910	Joseph and Meltzer	Dog	KCl	38.3
1908	Marenzi	Dog	KCl	20

ment that small doses of potassium increase, while large doses weaken and paralyze, the normal functions of the nervous, glandular and muscular systems.

Most authorities attribute death to cardiac paralysis: Claude Bernard,[19] Traube,[20] Grandeau,[21] Aubert and Dehn,[22] Bohm,[23] Dogiel,[24] Feltz and Ritter,[25] Bochefontaine,[26] Binet,[27] Hald,[28] Mathison,[29] Howell,[30] Gross [31] and Wiggers.[32]

Electrocardiograms taken in the course of conditions associated with hyperpotassemia [33] or after ingestion,[34] injection,[35] perfusion [36] or topical application [32] of potassium salts show a variety of changes. These range from slowing of the rhythm, decrease in PR interval and low voltage, to bundle branch block, ventricular fibrillation and cardiac arrest.

The respiratory and cardiac centers are other focal points of potassium action. Hooker [37] had demonstrated, by infusing the medulla of dogs, that an increasing concentration of potassium over calcium in the spinal fluid is followed by both respiratory and cardiac arrest.

Vascular smooth muscle is constricted by an increase in potassium concentration.[38] Of importance is the recent experimental work of Katz and Linder,[39] who reported coronary dilatation with small doses and complete occlusion with larger doses of potassium. In this condition, sodium salts caused relaxation of the constricted vessels.

The effect of potassium on blood pressure depends on the manner of injection and amount of the salt injected.[40] In general a decline in blood pressure occurs with intravenous [41] and a rise with intra-arterial medication.[42]

Aubert and Dehn,[22] however, reported a rise with very small intravenous doses. Mathison [29] has confirmed both the pressor and depressor effects of potassium salts.

Toxic oral doses are promptly vomited, and with certain animals ligation of the esophagus [43] was necessary to demonstrate that absorption from the gastro-

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intestinal tract may be toxic. The lethal doses, however, are from seventy to a hundred times the intravenous ones.

ANIMAL EXPERIMENTS

To test again the toxic action of potassium, the rabbit and dog were selected. The former has a high and the latter a low potassium content of the blood cells.

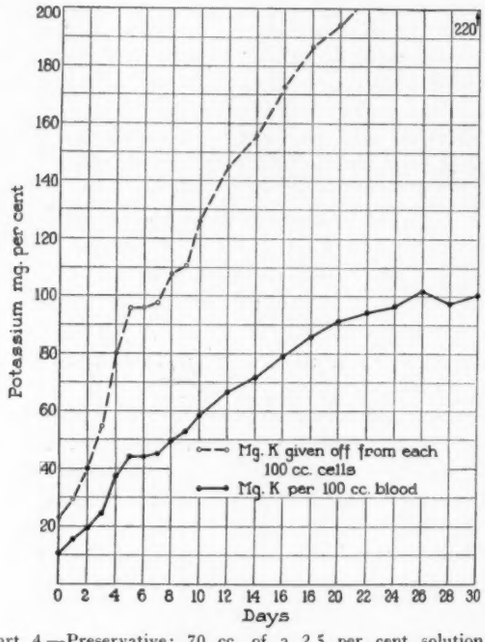

Chart 4.—Preservative: 70 cc. of a 2.5 per cent solution of sodium citrate for each 500 cc. of blood. The diffusion of potassium is expressed in two ways: (*a*) the amount given off from 100 cc. of cells (theoretical) and (*b*) the increase in the potassium in each hundred cubic centimeters of blood. Data from experiment 7, table 3. The points for this chart were obtained by adding the initial base line values to the daily increments expressed in the table. This chart shows the actual amount of potassium in each hundred cubic centimeters of blood. In giving a transfusion of 1,000 cc. of this blood on the thirtieth day one would be giving 1 Gm. of potassium. Under such circumstances extreme caution would need to be exercised, for example in the rate of injection.

TABLE 15.—*Rabbits Given Injections of Solution of Potassium Chloride*

Rabbit	Weight, Kg.	Concentration of Solution as Gm. per 100 Cc.	Amount Injected as Cc.	Place and Speed of Injection	Potassium Chloride as Gm.	Potassium as Mg. per Kg.	Results
1	2.01	0.381	550	Peritoneum Slowly	2.1	547	Died on seventh day
2	2.0	0.381	500	Peritoneum Slowly	1.96	514	Revived and given another injection on twelfth day
3	2.5	0.381	40	Jugular vein Rapidly	0.152	32	Convulsion; died at once
4	2.36	0.381	40	Jugular vein Rapidly	0.152	34	Convulsion; died at once
5	2.0	0.381	50	Jugular vein Rapidly	0.19	49	Convulsion; died in few minutes
2	2.0	1.16	42	Jugular vein Slowly	0.487	128	Convulsion; died in 15 min. 5 sec.

In our first set of experiments five rabbits were used. In three the potassium chloride solution was injected rapidly into the jugular vein, with immediate death after a generalized convulsion. In two the solution was injected into the peritoneum; one lived a week and the other recovered and was given an intravenous injection on the twelfth day. The results are given in table 15.

In the second group of experiments four dogs were used in an attempt to determine more accurately what part the speed of injection plays in the production of toxic symptoms. A typical protocol is presented in table 16. The actual lethal dose was given when 275 cc. (138.5 mg. of potassium per kilogram) of fluid had run in. The additional 25 cc. was accidental and may account for the excessive rise shown by the last value for plasma potassium. The gradual fall in the specific gravity and protein content of the plasma may be considered as an indication of blood dilution. The changes in the cell volume as recorded by hematocrit readings are more difficult to explain. The initial fall represents dilution and the secondary rise a sudden transport of fluid from the blood.

A summary of the experiments on dogs is presented in table 17.

TOXICITY IN MAN

The literature is very meager regarding the toxic action of potassium on man. Orfila [43] in 1818 reported the following cases:

A man with periodic fever took 1½ ounces (45 cc.) of potassium nitrate, thinking it was epsom salt, and died in ten hours.

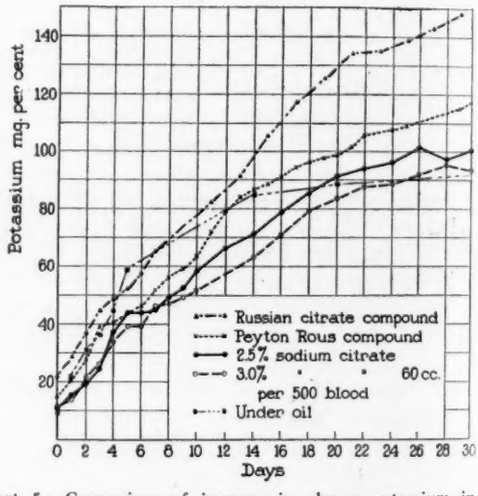

Chart 5.—Comparison of increase in plasma potassium in differently preserved bloods. The actual amounts of potassium in the plasma of 100 cc. of blood on any given day are shown. The points were obtained as in chart 4. The data are from experiments 1, 7, 8, 9 and 10, tables 1, 3, 4, 5 and 6.

A woman aged 40, suffering from heartburn, took 3 or 4 drachms (11 to 15 Gm.) of potassium sulfide in 4 ounces (120 cc.) of water by mistake. Severe vomiting ensued, followed by unconsciousness, the presence of black blood in the capillary system, especially of the lips and eyelids, and paralysis of the left side of the body. The action of the heart was barely perceptible and then failed. Autopsy showed the mouth and esophagus to be clean; the gastric mucosa was not greatly involved, except that here and there it was dry and red, with sulfur precipitates.

Many other cases were reported; when death was rapid the picture was one of shock and when it was delayed one of severe gastro-enteritis.

Bunge [43] observed that small doses do not affect the pulse or temperature.

Kylin [44] in 1925 injected from 0.15 to 0.8 Gm. of potassium chloride intravenously and reported a fall in the blood sugar content.

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Arden [45] in 1934 recorded a case in which 15 Gm. of a potassium salt was taken by mouth. Muscular weakness, paresthesia of the hands and feet and a metallic taste in the mouth appeared in forty minutes and lasted from three to four hours.

Electrocardiographic tracings after the ingestion of potassium salts equivalent to 4.3 Gm. of potassium element have been reported.[34]

5. Recovery may be effected by artificial respiration, cardiac massage, the use of oxygen, injections of salt solution [46] and administration of cortical extract in large doses.[35]

COMMENT

The employment of preserved blood has increased during the past twenty years because of its numerous advantages.[47]

TABLE 16.—*Infusion into Dog of Isotonic (1.16 Gm. per Hundred Cubic Centimeters) Solution of Potassium Chloride*

Time	Elapsed Time in Minutes	Infusion	Hematocrit Reading; Percentage of Cells	Specific Gravity of Plasma	Plasma Proteins, Gm. per 100 Cc.	Whole Blood Potassium as Mg. per 100 Cc.	Plasma Potassium as Mg. per 100 Cc.	Source of Blood	Comment
10:25 a. m.	..	Before anesthesia	49.0	1.0262	6.56	24.5	22.7	Leg vein	Blood for base line slightly hemolyzed; given 30 mg. per Kg. of pentobarbital sodium
10:35 a. m.	0	After anesthesia; infusion started	44.6	1.0248	6.09	20.1	14.0	Leg vein	
10:44 a. m.	9	After 100 cc.	38.9	1.0240	5.81	24.2	20.2	Jugular vein	Rate of infusion 20 drops a minute after first 50 cc.
11:29 a. m.	54	After 200 cc.	40.2	1.0237	5.72	36.8	40.1	Jugular vein	Cyanotic, with irregular paired respirations, during a period when fluid went in too fast
11:39 a. m.	64	After 275 cc.	47.4	1,0231	5.52	49.2	62.1	Jugular vein	Convulsion, stopped breathing, sphincters relaxed; heart fibrillating
11:41 a. m.	66	After 300 cc.*	38.6	1.0195	4.28	67.0	172.0	Right side of heart	Heart stopped; blood clear; no hemolysis

At death: Potassium in cerebrospinal fluid from basal cistern, 51.8 mg. per hundred cubic centimeters and in urine, 74.4 mg. per hundred cubic centimeters

Autopsy heart dilated, no pericardial effusion, bladder full; no petechial hemorrhages

* 25 cc. accidentally run in rapidly after convulsion.

TABLE 17.—*Dogs Given Injections of Isotonic (1.16 Gm. per Hundred Cubic Centimeters) Solution of Potassium Chloride*

Dog	Weight, Kg.	Solution Injected as Cc.	Potassium Chloride Injected as Gm.	Potassium as Mg. per Kg. of Body Weight	Time, Minutes	Plasma Potassium Before Injection, Mg. per 100 Cc.	Plasma Potassium at Death, Mg. per 100 Cc.	Comment
1	9.8	100	1.16	62.1	3½	18.9	99.5	Pentobarbital sodium anesthesia, 30 mg. per Kg.; fluid run rapidly into vein by infusion; died after convulsion
2	10.3	120	1.392	73.0	18½	22.8	51.5	No anesthesia; fluid administered by syringe, 10 cc. at a time, slowly; died after a convulsion
3	8.8	100; some leakage into tissue	1.16	61.0	33	18.8	26.0	Pentobarbital sodium; infusion; young dog; died suddenly
						15.5	25.6	Spinal fluid
4	12.0	275	3.19	139.0	64	22.7	172.0	Pentobarbital sodium; fluid run in slowly by infusion; died after convulsion
							51.0	Spinal fluid

SUMMARY, PART III

1. The parenteral administration of potassium is associated with toxic manifestations of both muscular and nervous tissue together with a depression of the central nervous system.

2. The almost specific action of potassium is on the heart and circulation, with disturbances varying from diminished cardiac output to immediate diastolic arrest.

3. We have reaffirmed the lethal doses for animals previously reported.

4. The rate of injection is of particular importance, for when the potassium is given slowly several times the usual lethal dose is tolerated.

Of the many preservatives used, none tested prevented the diffusion of potassium from cells. In several hemolysis was slower and in one it did not take place at all, yet the diffusion of potassium was not altered. The remainder showed definite hemolysis; in some it started as early as the fifth day. All this illustrates the inadequacy of present methods of storage.

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Although the observation that red blood cells lose potassium is not new,[48] no attempts have been made to prevent this loss. One of the problems of the future therefore is an attempt to keep blood under such conditions that both diffusion of the salts and hemolysis are prevented. The required knowledge may come through a better understanding of the laws which govern cell metabolism, diffusion and surface phenomena.

Naunyn [49] in 1868 first described the toxic properties of laked blood. His observations have been reaffirmed by many subsequent investigators, beginning with Landois,[50] but the nature of the toxic substance or substances has yet to be revealed.

Phemister [51] and Phemister and Handy [52] reported that there was something in slightly laked bloods which caused vasodilatation and in more severely traumatized blood which caused vasoconstriction. It was not histamine, not products of the disintegration of epinephrine and not the pituitary principle, nor did it develop as the result of changes in oxygen, carbon dioxide or hydrogen ion concentration, shifts in temperature or exposure to light or air. Petroff and his associates [53]

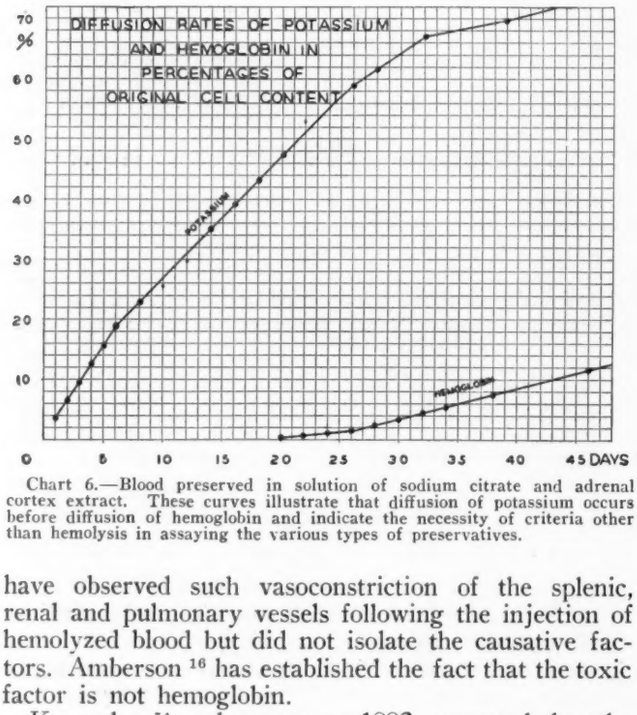

Chart 6.—Blood preserved in solution of sodium citrate and adrenal cortex extract. These curves illustrate that diffusion of potassium occurs before diffusion of hemoglobin and indicate the necessity of criteria other than hemolysis in assaying the various types of preservatives.

have observed such vasoconstriction of the splenic, renal and pulmonary vessels following the injection of hemolyzed blood but did not isolate the causative factors. Amberson [16] has established the fact that the toxic factor is not hemoglobin.

Kronecker [54] as long ago as 1882 suggested that the toxic effects of laked blood were due to its high potassium content. The finding of a large increase in the plasma potassium of preserved blood again raises this question. The intravenous lethal dose for man has not been observed. Studies on animals suggest that a rapid transfusion of from 3 to 5 liters of blood with a plasma content of 100 mg. per hundred cubic centimeters would be necessary to kill an adult. Blood preserved for thirty days by the methods now in use would contain potassium at this level, but it is unlikely that such quantities of stored blood would be used except as a slow continuous drip. It is probable, however, that such blood often may be used in quantities sufficient to cause toxic manifestations from its high potassium content.

The rapid administration of large quantities of blood preserved too long may be dangerous in conditions associated with hyperpotassemia, specifically in the dehydration of cholera,[55] intestinal obstruction,[56] intestinal fistula [57] and severe burns.[7]

Likewise its use seems contraindicated in both renal [58] and hepatic insufficiency [59] as well as in those diseases in which potassium retention is manifest, such as typhoid, influenza and pneumonia.[7]

In certain disorders of the ductless glands linked with disturbances in salt metabolism,[60] such as parathyroid tetany [61] and the collapse state of addisonian crises,[62] the giving of highly potassic blood may be dangerous.

On the other hand, in conditions of hypopotassemia, or potassium lack, preserved blood may find a specific use.

Finally, in hemorrhage and shock,[63] in which the need for blood is greatest and in which preserved blood finds its greatest usefulness, its improper use would seem to carry the greatest danger.

This study has been limited to potassium and hemoglobin. No claim is made that in potassium alone lies the noxiousness of preserved blood. Observations

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regarding the relative toxicities of magnesium,[64] ammonia and phosphorus will be reported subsequently.

CONCLUSIONS

1. There is a daily increase in the plasma potassium of preserved blood kept under aseptic, bacteriostatic conditions, with increments reaching as high as 1,000 per cent.

2. None of the preservatives tested prevent this diffusion of potassium from the cells, the lowest rates being found in blood preserved in a mixture containing 0.3 Gm. of sodium citrate per hundred cubic centimeters.

3. Agitation, such as shaking, hastens the loss of potassium from the cells.

4. The shape of the container markedly influences the rate of potassium diffusion; the greater the interface area between the cells and the supernatant plasma, the greater the rate of diffusion. This suggests that tubular containers may be preferable to wide-bottomed flasks.

5. There is no parallel between the rates of diffusion of potassium and hemoglobin; hence the degree of hemolysis cannot serve as an index of plasma potassium.

7. In pathologic states associated with potassium retention or sensitivity, the use of blood preserved too long seems ill advised.

Clinical Notes, Suggestions and New Instruments

SULFANILAMIDE IN THE TREATMENT OF OTITIS MEDIA

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The efficacy of sulfanilamide in the treatment of acute otitis media due to the beta hemolytic streptococcus has been tested on eighty-eight patients and the results controlled by a similar group who were not given sulfanilamide. In both of these groups a red, protruding tympanic membrane was incised early in the course of the disease or the opening in a spontaneously ruptured membrane of the drum was enlarged to secure adequate drainage. The only difference in the treatment was the administration of sulfanilamide. The accompanying table shows the monthly incidence of otitis media due to the beta hemolytic streptococcus throughout the year and the striking difference in the number of mastoid operations and other complications in the two groups. The effect of the drug on the duration of the discharge was striking; those given sulfanilamide recovered in one third the time.

To obviate the possible objection that the results in these two groups of patients are due to a seasonal difference in the virulence of the infecting organism, I have listed for each month the number of patients given sulfanilamide and those who did not receive sulfanilamide. They are about evenly divided. The table also shows that infections of the ear are most common in December, January, February and March, although in two of the four cases in which septicemia developed the infection began in June in one and in November in one.

The total number of patients observed was 183. Most of these were treated in the outpatient department and their home care was inadequate.

Of ninety-five patients who had a paracentesis but were not given sulfanilamide, sixty-six required a mastoid operation.

Of eighty-eight patients who had a paracentesis and were given sulfanilamide, only seven required a mastoid operation.

Of ninety-five patients who were not given sulfanilamide, four had septicemia; three of these recovered after operation and one died.

Of eighty-eight patients who were given sulfanilamide, none had complications.

The average duration of otorrhea of ninety-five patients who were not given sulfanilamide was sixty-five days.

The average duration of otorrhea of eighty-eight patients who were given sulfanilamide was twenty-three days.

The sulfanilamide, with an equal amount of sodium bicarbonate, was always given by mouth. Provided the patient is seen daily, I have found that a safe and effective dose is 10 grains (0.65 Gm.) three times a day for the first four days and 5 grains (0.3 Gm.) three times a day thereafter. If the patient is in the hospital and is watched closely for the first signs of toxicity, and if the severity of the infection warrants a larger amount of the drug, the dosage for both adults and children may be increased for a limited period up to 20 grains (1.3 Gm.) per kilogram of body weight. It is desirable to keep the concentration of sulfanilamide in the blood at a constant level, and for this reason frequent small doses are given rather than larger doses at longer intervals. The drug is rapidly excreted through the kidneys, and the best results are obtained by limiting the intake of fluids.

There are certain toxic symptoms that should be looked for by the nurses and physicians. All patients receiving sulfanilamide in adequate doses are cyanotic, but this is not a sign of toxicity. The undesirable effects of the drug are:

1. Increasing weakness and lassitude: If the general condition warrants it, the dose should be reduced or the drug discontinued for a few days.

2. Loss of appetite: The same consideration should be given as for 1.

3. Nausea and vomiting: Sulfanilamide should be discontinued and intravenous dextrose and saline solution given.

4. Fever, which decreases when the drug is withdrawn and increases when it is begun again: If the patient's general condition is good and local conditions in the wound do not explain a continued low grade septic temperature, discontinuance of the drug may be tried for a few days.

5. A progressive fall in hemoglobin: Transfusions should be begun and the dosage reduced or the drug discontinued.

6. Dermatitis, especially the exfoliative type: Sulfanilamide should be discontinued.

7. Severe hemolytic anemia with jaundice: Sulfanilamide should be discontinued and a transfusion given.

8. Agranulocytosis: Sulfanilamide should be discontinued and a transfusion given.

Monthly Incidence of Otitis Media Due to the Beta Hemolytic Streptococcus

	Beta Hemolytic Streptococcus Otitis Usual Treatment, No Sulfanilamide			Beta Hemolytic Streptococcus Otitis Usual Treatment Plus Sulfanilamide		
	Monthly Distribution of Cases	Number of Cases Requiring Mastoidectomy	Complications	Monthly Distribution of Cases	Number of Cases Requiring Mastoidectomy	Complications
January	19	16	0	21	2	0
February	16	14	2*	19	1	0
March	13	9	0	15	1	0
April	7	5	0	8	1	0
May	8	5	0	7	0	0
June	5	2	1*	4	1	0
July	4	1	0	1	0	0
August	0	0	0	0	0	0
September	1	0	0	1	0	0
October	6	3	0	0	0	0
November	2	0	1*	1	0	0
December	14	11	0	11	1	0
	95	66	4	88	7	0

* Positive blood culture.

The appearance of any one of these eight symptoms is a warning that the patient does not tolerate the drug well, and the decision as to whether the dose should be reduced or the drug discontinued depends on the seriousness of the infection and the general condition of the patient. Reduction of the dose or discontinuance of the drug should be considered when one or more of the first four symptoms appear, but it is imperative to discontinue giving sulfanilamide when any of the last four symptoms make their appearance.

64. Joseph, D. R., and Meltzer, S. J.: The Comparative Toxicity of the Chlorides of Magnesium, Calcium, Potassium and Sodium, J. Pharmacol. & Exper. Therap. **1**: 1-26, 1909-1910.

From the Otolaryngological Department of the Johns Hopkins Hospital.

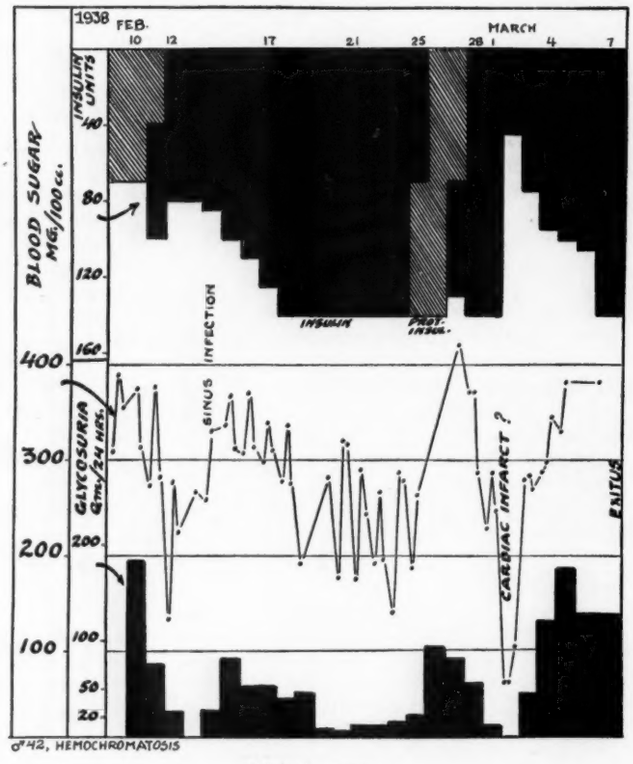
HEMOCHROMATOSIS WITHOUT PIGMENTATION OF SKIN

RESISTANCE TO PROTAMINE ZINC INSULIN

HENRY J. JOHN, M.D., CLEVELAND

When one is confronted with a case of diabetes, enlarged liver, palpable spleen and ashy gray color of the skin the presumptive evidence is that one is dealing with a case of hemochromatosis. To prove this one can perform a biopsy of the skin, and if this shows the pigment the diagnosis is settled.

In the case I am reporting there were severe diabetes, an enlarged liver, a palpable spleen and an ashy gray color. A biopsy of the skin showed no pigmentation. Clinically the condition was hemochromatosis, but the lack of pigment in the skin raised a question. The patient was a man aged 42 who had diabetes of a year's standing. He had always been dark but more so in recent years. His brother was dark skinned but had no diabetes. His general health was always excellent until April 1937, when he began to lose weight, and at this point slight polydipsia and polyuria developed. A few weeks later the diabetes was discovered and he was treated unsuccessfully with a dietary regimen. From three to four months before admission he was put on insulin; the symptoms improved but loss of weight persisted. The loss of weight was from 275 to 185 pounds (125 to 84 Kg.) at the time I first saw him, Feb. 3, 1938, when the sugar content of his blood morning, noon and night was 309, 389 and 353 mg. per hundred cubic centimeters on 40, 0 and 30 units of protamine zinc insulin a day. He was a man of robust build, larged boned and somewhat under par. The blood pressure was 110 systolic and 80 diastolic. The temperature and pulse rate were normal. The skin was dark and scaly. There were tenderness over the right frontal sinus and a mucopurulent nasal discharge. The Wassermann reaction was negative. The icterus index was 10. The urea nitrogen content of the blood was 23.2 mg. and the cholesterol content 226 mg. per hundred cubic centimeters. The electrocardiogram showed a shifting pacemaker and occasional dropped beats, some slurring of QRS group and slight elevation of $S\text{-}T_1$, $S\text{-}T_2$ and $S\text{-}T_4$. X-ray examinations showed a bulge in the region of the left ventricle, with no general enlargement. The right frontal sinus was partly cloudy. Roentgenograms of the bones showed slight osteoporosis, with a small calcified lesion anterior to the cervical vertebrae. The chest was clear.



Diabetic status.

The diabetic status can be followed from the chart. The average sugar content of blood on 70 units of protamine zinc insulin at the start was around 350 mg. per hundred cubic centimeters, and the patient was losing nearly 200 Gm. of sugar in the urine. A change over to increasing doses of insulin reduced the average sugar level of the blood to about 200 mg. and the glycosuria to zero on the fourth day in the hospital. At this time the sinus infection was aggravated; roentgen treatment to the sinus was used, and during the infection the sugar content of the blood rose to its original level, although the urine's twenty-four hour excretion was on the average about 50 Gm. The insulin intake was raised to 140 units a day (four doses), and on this the sugar level of the blood dropped to an average of about 250 mg., and the glycosuria nearly subsided. It was at this point that I substituted protamine zinc insulin, an equivalent dose of two injections a day. The sugar content of the blood rose promptly, and excretion of sugar rose over 100 Gm. Again insulin was substituted, and on March 2 the patient had what was thought to be a cardiac infarct, and the sugar content on that day dropped to a low level of 69, 68 and 104 during the day. The insulin intake was reduced as low as 65 units and gradually raised to the former dose. The patient left the hospital on the afternoon of March 7 and died the next day of cardiac failure when he got up from bed against advice.

Here then was a man relatively insensitive to protamine zinc insulin. The impression was definitely that of hemochromatosis but biopsy of the skin failed to confirm it. It was left to autopsy to settle the question definitely.

At autopsy hemochromatosis of the liver, spleen, pancreas, kidney, heart, adrenal glands and portal, peripancreatic and periaortic lymph nodes was seen. There were marked atrophy and infiltration of the pancreas by fat, slight "bronzing" of the skin, splenomegaly (45 Gm.), ascites (1,500 cc.), hydrothorax (1,500 cc. on the right and 500 cc. on the left), edema of subcutaneous tissues, hypertrophy and dilatation of the heart (550 Gm.), fatty degeneration of the heart and mural thrombus of the apex of the left ventricle. A recent infarct was evident in the right kidney. There were passive hyperemia of the gastrointestinal tract, dilatation of the umbilical vein, moderate dilatation of the esophageal veins and acute fibrinous pleuritis and compression atelectasis of the right lower lobe.

Microscopic examination of the heart showed a large amount of pigment deposited principally at the nuclear poles, but in some fibers extending throughout the length of these; this proved to be hemosiderin. Stains for hemofuscin gave negative results. There were an enormous number of fat droplets within the muscle fibers; there was no evidence of infarction.

The pancreas too showed an enormous amount of fatty tissue, an increase in the connective tissue and a diffuse infiltration of pigment in this overgrown connective tissue. The islets of Langerhans were relatively large and well defined and contained an enormous number of granules of pigment. The epithelium of the acini was heavily laden with the pigment, as were the interstitial tissues.

The kidneys, liver, lymph nodes, lungs and spleen showed hemosiderin, which was absent in the other organs.

Hemochromatosis is comparatively rare. This is the first case which I have encountered among 4,941 cases of diabetes. Diabetes in these patients is secondary to hemochromatosis, which precedes and the pigment of which eventually incapacitates the insulogenic apparatus to diabetic status. The primary rise in the sugar level of the blood in these cases is likely due to the interference with the storage of glycogen in the liver, which is enlarged from fatty degeneration and the cells of which are filled with pigment. The cardiac action is interfered with from the same cause. It is easy to see how the individual cells of the cardiac muscle become incapacitated when the pigment practically crowds out the intracellular mass. Heart failure is bound to come if any additional strain is put on the heart, as was the case here. Practically all of the classic picture was present in this case: enlarged liver, enlarged spleen, ascites, abdominal pain, diarrhea, vomiting, impotence, somnolence and apathy, low blood pressure, cardiac failure and diabetes. The only varying factor was the fact that no pigment could be demonstrated either in biopsy of the skin or at postmortem examination in the presence of the ashy gray color which was so typical. The other point in question was the

large dose of insulin needed for control and the relative insensitivity to protamine zinc insulin. The protamine zinc insulin was not used during the active stage of sinus infection, so that could not be explained on this basis, but about a week after the infection had subsided. It is possible that protamine zinc insulin may not be as effective as insulin in hemochromatosis, a point which will have to be determined by further observations.

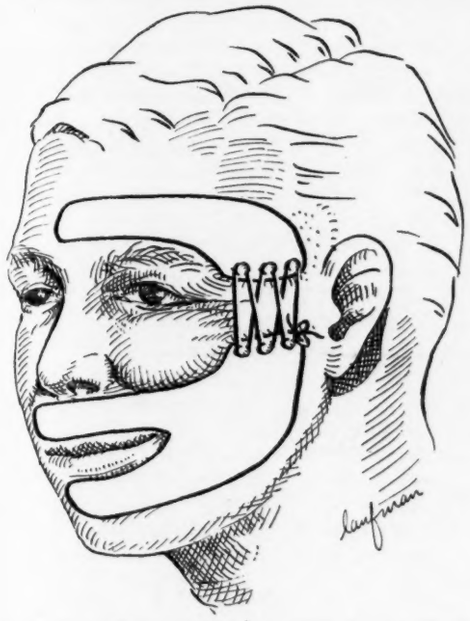
10515 Carnegie Avenue.

THE PRESERVATION OF MUSCLE FUNCTION IN BELL'S PALSY

PHILIP LEWIN, M.D., CHICAGO

The same orthopedic principles that apply to other lesions of the peripheral nerves should apply in Bell's palsy, namely, maintenance of muscular tone until return of nerve function, thereby keeping the muscle receptive to nerve impulses if, as and when they reappear.

Most textbooks on neurology offer descriptions of the etiology, pathology and diagnosis of the lesion but are strikingly inadequate with regard to treatment. My purpose here is to describe a method of splinting some of the facial muscles.



Adhesive plaster splints with string, producing overcorrection of deformity.

Bell's palsy may follow exposure to cold, as in sleeping in a drafty room or riding by an open window in a train or automobile. The onset is usually sudden, with pain behind the ear and in the neck. The palsy may be recognized when the patient awakens in the morning, at which time all or any one of the facial muscles may be affected. Fever may or may not be present.

In a typical advanced case the forehead cannot be wrinkled, the buccinator muscles cannot be contracted and whistling is impossible. The upper lid cannot be firmly closed and may be completely paralyzed. The nasolabial fold is obliterated. There is no apparent atrophy. The amount of facial paralysis varies in each case, and the reaction of degeneration determines this quantitatively.

Recovery occurs in a variable time. It may be hastened by physical therapy and by galvanism applied to the nerve and muscles. The upper facial fibers may get into the lower division and each wink of the eye may cause a twitch of the muscles about the mouth. The usual order of regeneration is the buccinator, the zygomatic and the superior levator muscle. Anastomosis with the hypoglossal or accessory nerves has been tried in cases in which there has been very little recovery, but with little success.

REPORT OF A CASE

A man aged 49 had facial palsy of the right side, apparently due to exposure to the wind and rain while riding in a motor car three days previously. He was seen by Dr. L. J. Pollock, who confirmed the diagnosis and prescribed court-plaster splinting. A search of the literature failed to reveal a pattern as a guide. One was therefore designed and made in the surgical dressing department of Michael Reese Hospital, a likeness of which is shown in the accompanying illustration. The splint is made of adhesive plaster with hooks such as gynecologists use in making abdominal binders for postoperative patients. After ten days of splinting the patient was given a series of galvanic treatments by Dr. Pollock five days apart. A complete recovery followed.

55 East Washington Street.

ANGINA PECTORIS AND SPASM OF THE CARDIA WITH PAIN OF ANGINAL DISTRIBUTION ON SWALLOWING

JOSEPH EDEIKEN, M.D., PHILADELPHIA

The similarity of the pain of angina pectoris and the pain due to certain lesions of the gastrointestinal tract is not unusual and is well known. Furthermore, the immediate cessation of an attack of angina pectoris following eructation of gas and, conversely, the initiation of an attack following a heavy meal or gaseous distention is not uncommon.

My purpose in this communication is to report a case of angina pectoris in which there was evidence of coronary and aortic disease and spasm of the cardia and in which attacks of pain similar in final distribution, but occasionally somewhat different in initial location, was produced by swallowing. Although the two types of pain were very similar in character and distribution, they differed in provocative causes and mode of relief.

B. D., a white woman aged 67, seen May 6, 1937, had suffered from chronic arthritis, hypertension and angina pectoris for a number of years, but the latter condition had been worse during the past few years. On effort or excitement a severe substernal pain would develop, radiating down both arms to the fingers and associated with a feeling of suffocation. Two weeks before this examination, following a severe emotional upset, similar attacks developed on swallowing, so that she had been afraid to eat solid food. The only point of difference between the attacks on effort and those on swallowing was that the latter sometimes started in the fingers and radiated upward to the chest. She experienced the same sense of suffocation as during the attacks on effort.

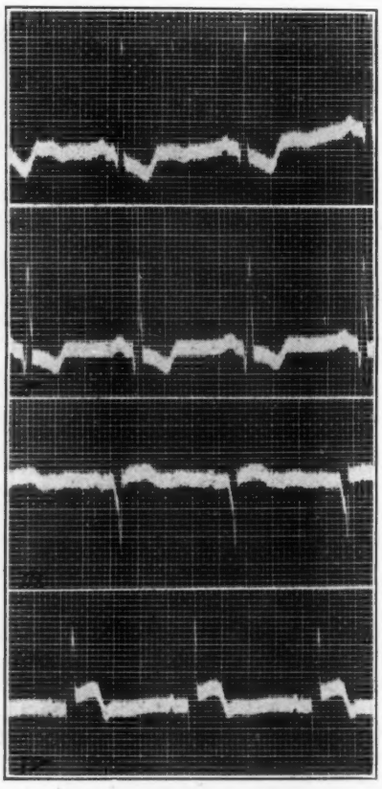
On physical examination the patient appeared quite ill. The pupillary reflexes were normal; the retinal vessels were sclerotic. There were several bad looking teeth. The chest was emphysematous and there were rales at both bases. The heart did not appear enlarged nor was the supracardiac area widened. There was a loud, rasping systolic murmur at the apex and base. The first sound at the apex was faint; the second aortic sound was accentuated. The blood pressure was 184 systolic, 76 diastolic. The peripheral vessels were sclerotic. The liver was not enlarged but there was slight pretibial edema.

The electrocardiogram presented here showed evidence of advanced myocardial disease and the orthodiagram showed the heart to be of normal size, but the apex was rounded, suggesting left ventricular hypertrophy. The region of the pulmonary artery was prominent and the left auricle was enlarged in the oblique and lateral views. The blood count showed 95 per cent hemoglobin, 4,950,000 red cells and 10,800 white cells, of which 72 per cent were polymorphonuclear leukocytes. The urine was normal except for a faint trace of albumin and an occasional hyaline cast. The blood sugar was 88 mg. per hundred cubic centimeters of blood, and the urea nitrogen 14 mg. The Wasserman reaction of the blood was negative.

Bed rest was advised and the patient placed on a prescription containing theophylline, phenobarbital and small doses of digitalis. She was also given an alkaline powder after meals and glyceryl trinitrate 1/100 grain (0.0006 Gm.) for the attack. One

From the Edward B. Robinette Foundation, Medical Clinic, Hospital of the University of Pennsylvania.

week later, May 14, she complained bitterly of attacks of pain on swallowing unrelieved by glyceryl trinitrate. These were so severe that she refused everything but liquids, which did not cause as severe pains as solids. She was therefore placed on extract of belladonna and extract of hyoscyamus, of each one-twelfth grain (0.005 Gm.) four times a day, in addition to the aforementioned drugs. Improvement was marked, and on June 11 she was entirely free of pains and was permitted out of bed. X-ray examination of the stomach and duodenum by Dr. Louis Edeiken July 7, seven weeks after treatment with antispasmodics, revealed that the esophagus was displaced posteriorly by an enlarged left auricle. The extreme lower end of the esophagus was narrow but its outline was regular. There was definite delay in the passage of the opaque mixture and a slight hesitancy in the passage of the opaque capsule at the lower end of the esophagus. The stomach showed that considerable air had been swallowed with the ingestion of the barium meal. The stomach was normal in size, shape and position, freely mobile, flexible and not tender; peristalsis was regular and active, and the stomach emptied itself within six hours. No deformities were observed. The bulb of the duodenum was regular in outline and normal. At the six hour examination the stomach was completely empty and the head of the barium column was in the terminal ileum; at the twenty-four hour examination the head of the column was in the rectum.



Electrocardiogram taken May 6, 1937. Chest lead taken with right arm electrode at apex and left arm electrode at angle of scapula. Elevation of ST interval in lead 4 may be due to digitalis.

Thereafter she was entirely free from attacks on swallowing but continued to have attacks on effort and excitement. These attacks were relieved by glyceryl trinitrate. September 11 she reported that attacks were few in number and only on effort. She was again seen October 4 after her return from the seashore. She had a few attacks on effort but attacks on swallowing had again developed. She admitted, however, that she had not taken medication for several weeks because she had been away from home. She was again placed on belladonna and hyoscyamus and November 20 reported attacks only on effort. She felt fairly well until April 10, 1938, when she began to have severe attacks of pain without any definite relationship to meals, effort or excitement. April 29 she reported that the attacks were almost continuous and she was again advised to go to bed. May 4 a coronary occlusion developed and she died May 9. Postmortem examination was not permitted.

This case is of interest because of the acute onset of pain on swallowing, complicating angina pectoris of long duration. The attacks of pain provoked by swallowing and effort were very similar in character and distribution and each was also accompanied by a sense of suffocation. Although the mechanism of the attack on swallowing appeared to be different than that on effort, the data on hand do not permit their differentiation with any degree of certainty. Electrocardiographic changes during the different attacks might have been helpful in proving the single or multiple origin of the various attacks, but unfortunately these were not obtainable. Two possible explanations for the attacks of pain following swallowing present themselves: (1) the pain was due to spasm of the cardia and (2) the attack was angina pectoris induced by the esophageal abnormality.

The association of cardiospasm with aneurysm, aortitis and angina pectoris has been noted by Verbrycke,[1] who reported twenty-three cases. In his series, cardiospasm was not accompanied by pain. The occurrence of dyspnea, cough, palpitation and anginal pain in cardiospasm, however, has been reported by Starling and Camps,[2] but in their cases the esophagus was markedly dilated and dilatation of the cardia was followed by relief of cardiac and respiratory symptoms. It is conceivable that a dilated esophagus, when distended by food, may exert considerable pressure on the mediastinal structures. X-ray examination in our case indicates that pressure was not responsible for the acute onset of pain on swallowing. Spasm of the cardia was noted, which in contrast to cardiospasm is considered by Friedenwald and Morrison[3] as a mild degree of obstruction in the lower end of the esophagus, temporary in character and unassociated with dilatation of the esophagus, a condition which frequently, as in our case, follows an emotional upset.

Esophageal pain similar in character and distribution to that of angina pectoris is stated to have been produced experimentally. The Jacksons[4] have concluded from their experiments on dogs that pain originating in the portion of the esophagus and adjacent mediastinum that lies between the horizontal midline of the heart and the upper opening of the thorax radiates down one or both arms. Morrison,[5] in his experiments on normal students, has shown that, regardless of the site of the local balloon distention in the esophagus, pain of anginal distribution can be produced by distention in the upper, middle or lower portion of the esophagus. Morrison states that temporary changes in the electrocardiogram follow balloon distention of the esophagus.

Our data do not warrant considering spasm of the cardia as the sole cause of pain on swallowing. The chief differences between the two types of attacks of pain were as follows: The attacks of long standing angina pectoris were induced by effort or excitement, relieved by rest and glyceryl trinitrate and uninfluenced by antispasmodics. The attacks that followed swallowing were not influenced by rest or glyceryl trinitrate but were relieved by antispasmodics. These observations suggest that spasm of the cardia was a significant factor in the mechanism responsible for the attacks of pain after swallowing. We have been unable to find a report of a similar case in the literature, although von Bergmann[6] has found by x-ray examination that dilatation of the esophagus at or just above the cardia is frequently found in patients with angina or "anginoid" symptoms.

SUMMARY

1. A woman had spasm of the cardia which complicated effort angina of several years' duration. Evidence of coronary disease, aortic disease and spasm of the cardia was demonstrated by electrocardiogram and x-ray examination.

2. Attacks of pain on swallowing were very similar in character and distribution to those of angina pectoris provoked by effort or excitement, except that sometimes the former started in the fingertips and radiated to the chest, whereas the latter always started in the chest.

3. Rest in bed was followed by relief of anginal attacks but did not influence the pain on swallowing until antispasmodics were given; conversely, antispasmodics relieved the pain on swallowing but attacks on effort or excitement persisted.

4. The observations made in this case suggest that attacks of pain of paroxysmal incidence and the distribution and character of angina pectoris may be initiated by esophageal spasm.

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2. Starling, H. J., and Camps, F. E.: Two Cases of Achalasia of the Cardia with Severe Pressure Symptoms, Guy's Hosp. Rep. **85**: 201-206 (April) 1935.

3. Friedenwald, J., and Morrison, T. H.: Spasm of the Cardia and Cardiospasm, South. M. J. **16**: 341-348 (May) 1923.

4. Jackson, D. E., and Jackson, H. L.: Experimental and Clinical Observations Regarding Angina Pectoris and Some Related Symptoms, J. Lab. & Clin. Med. **21**: 993-1006 (July) 1936.

5. Morrison, L.: Personal communication to the author.

6. von Bergmann, G.: Das "epiphrenale Syndrom," seine Beziehung zur Angina pectoris und zum Kardiospasmus, Deutsche med. Wchnschr. **58**: 605-609 (April 15) 1932.

MECONIUM ILEUS

E. W. ADAMSON, M.D., AND JACK R. HILD, M.D., DOUGLAS, ARIZ.

In 1919 a case of intestinal obstruction in a newborn infant, caused by inspissated meconium, was described by Bullowa and Brennan.[1] Hughes[2] described a similar case in 1922. Since then, others have described the condition; Dodd[3] in 1936 reported the twenty-second case and gave a summary of the cases previously described. In six cases, including her own, necropsies revealed pathologic changes in the liver or pancreas, affecting the secretion of bile or pancreatic juice. Lack of either of these secretions was thought to be the causative factor.[3] The terms "meconium ileitis" and "meconium ileus" are both used as descriptive of the condition. The latter seems more appropriate.

REPORT OF CASE

The case here reported is one of meconium ileus and, in addition, presented an ileocolic intussusception that undoubtedly had existed before birth:

An infant girl was the third living child born to a healthy mother by spontaneous delivery. The mother was in labor one hour and ten minutes after entering the hospital. The previous children were living and well. Nothing abnormal was observed in the infant until thirty-six hours after birth, when she refused to nurse and began to regurgitate freely, with much mucus in the vomitus. An enema was attempted and a jelly-like substance with some blood was obtained by rectum. It is to be noted that up to this time no bowel movement had occurred. Colonic flushing was repeated, only a small amount of mucus and blood being obtained. The nurse then noted that the abdomen was hard and distended, with visible peristaltic waves. Physical examination revealed no other abnormalities. A diagnosis of intussusception with complete obstruction was made and immediate laparotomy was decided on.

Thirty-eight hours after birth the baby was taken to the operating room. Under local infiltration with 0.5 per cent procaine hydrochloride a lower midline incision was made. The last inch of the ileum was found invaginated into the cecum and many dense adhesions bound the inner and middle layers of the intussusception firmly together. It was reduced with some difficulty. The ileum showed marked enlargement for about 18 inches above the ileocecal junction, the distention being due to a dense mass of putty-like consistency which it was found impossible to move. The distended ileum was opened and an attempt, which failed, was made to remove the contents. The mass was composed of yellowish meconium with a consistency of thick wax. A catheter was purse-stringed into the enterostomy and the wound partly closed.

Following operation there was continued regurgitation and nothing but bloody mucus was obtained by colonic flushing. There was no drainage from the enterostomy tube. Death occurred twenty-one hours after the laparotomy and fifty-nine hours after the baby was born.

COMMENT

This case is unique in that there was really a mechanical obstruction as well as "meconium ileus." The adhesions binding the inner and middle layers of the intussusception together were so dense that it was impossible to decide on the length of time it had existed, except in a general way. It seems safe to say that the adhesions were much more than thirty-eight hours old at the time of operation.

The relation between the intussusception and the distended ileum, filled with waxlike meconium, is not clear. Since twenty-two cases of meconium ileus have been reported, with no evidence of other cause of obstruction, it would seem plausible to assign a secondary role to the intussusception—the result of violent peristaltic movements attempting to move the mass of waxy, inspissated meconium.

1060 G Avenue.

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2. Hughes, E. E.: Acute Intestinal Obstruction Due to Inspissated Meconium, Brit. J. Child. Dis. **19:** 32 (Jan.-March) 1922.
3. Dodd, Katherine: Intestinal Obstruction Due to Meconium Ileus in a Newborn Infant, J. Pediat. **9:** 486 (Oct.) 1936.

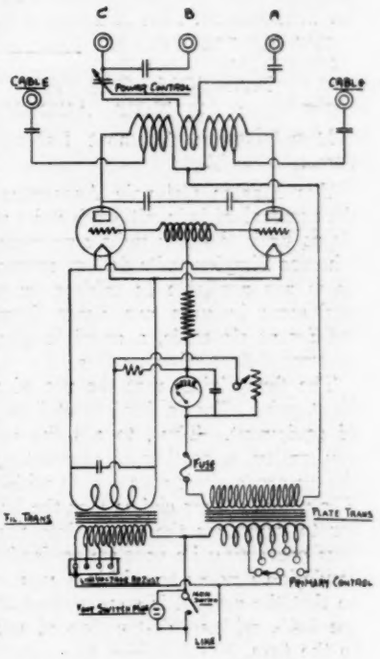
Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS. HOWARD A. CARTER, Secretary.

ALOE SHORT WAVE UNIT, TYPE CSC, ACCEPTABLE

Manufacturer: A. S. Aloe Company, 1819 Olive Street, St. Louis.

The Aloe Short Wave Unit, Type CSC, is recommended for medical and minor surgical procedures. It is similar to the Council accepted Aloe Short Wave Diatherm, Type CSW (THE JOURNAL, Sept. 4, 1937, p. 793) except for the addition of an inductance cable outlet, thus providing for coil, cuff and pad technics. The semiportable walnut finished unit with side handles is available with a walnut cabinet or chrome stand.



Schematic diagram of circuit.

Generating a 12 meter wavelength, the unit utilizes two tubes in a self-rectifying, push-pull, tuned plate, tuned grid oscillating circuit. The output circuit is inductively coupled to the plate circuit and is controlled by a variable air condenser in series with one patient terminal. The electrical parts are licensed under patents owned by the Electrical Research Products, Incorporated. (Cuff electrodes are manufactured under patent 2,110,392.)

Transformer temperature tests were carried out on the unit by an investigator for the Council. The machine was operated for a period of two hours under a load of 250 watts as measured by the lamp load. The final temperature of the transformer was 93 C. by the resistance method and 80 C. by the thermometer method. A power input of 750 watts was required and the electromotive force across the line was 110 volts. The final temperature by the thermometer method comes within the limits of safety. The firm submitted data concerning power measurements made by the calorimeter method.

In addition, the firm submitted evidence to support the ability of the unit to generate heat deep within the tissues. In the cuff technic the electrodes were made of a stiff resilient metal so that they embraced the thigh with a springlike action. The dimensions were 2⅜ by 25 inches (upper cuff) and 2⅜ by 18½ inches (lower cuff). The metal strip used in the electrodes is 1½ inches wide. The average distance between cuffs was: right, 7¾ inches; left, 7½ inches. Average spacing was: right, 1 inch; left, ⅞ inch. Room temperature was 74 F.; humidity was about 42 per cent.

Average of Five Tests by Calorimeter Method

Line voltage	120 volts
Plate current	360 milliamperes (2 tubes)
Input	996 watts
Output	402 watts

When the coil technic was tested, the distance between each coil was approximately 1 inch. About one-half inch of spacing was used to separate the coil from the skin. The average thigh circumference was about 19¼ inches. The room temperature was approximately 75 F., the humidity around 48 per cent.

The unit was tried out clinically by a qualified investigator, who reported that the apparatus gave satisfaction when used for cuff and coil technic.

Average Temperatures of Six Observations

Cuff Technic			
Deep Muscle		Rectal	
Initial	Final	Initial	Final
97.3	107.3	99.0	99.2
Coil Technic			
Deep Muscle		Rectal	
Initial	Final	Initial	Final
98.7	105.7	99.7	99.8

In view of the foregoing report, the Council on Physical Therapy voted to accept the Aloe Short Wave Unit, Type CSC, for inclusion in its list of accepted devices.

MARTON GALVANIC APPARATUS NOT ACCEPTABLE

Manufacturer: Tremont Laboratories, 110 West Fortieth Street, New York.

The Marton Galvanic Apparatus is designed primarily for the removal of hair, although units are available for iontophoresis as well. Duplex units supply currents for both procedures, whereas Simplex units deliver current only for depilation. Both types are available in cabinet or portable models. Standard equipment includes one dozen insulated electrodes, arm-band indifferent electrode, a multiple electrode holder, and cords to accommodate twelve needles.

The firm claims that the use of an insulated electrode with blunt point offers a fundamental improvement over older types of equipment. Thus, to aid the operator in gaging depth of penetration, a coating of contrasting color is superimposed on the electrode shaft reaching to within 2.5 mm. of the blunt end. The manufacturer claims that the blunt point enables the operator to maneuver the needle into the hair follicle more readily thus preventing its penetrating farther than the hair bulb. The insulation reaches to within 1 mm. of the end of the electrode, so that the current is concentrated at the point of application in the bulb, without destruction of surrounding tissue, according to the firm.

The manufacturer claims that twelve electrodes may be used at the same time by means of a multiple electrode holder consisting of a head band with twelve needles attached; that this band is attached to the patient; and that if the patient's head moves slightly the needles are not pulled from place.

The unit operates on ordinary house current, either direct or alternating. It supplies an unfluctuating, nonirritating, smooth current, according to the firm. An automatic time switch is included. This turns the current on after the needle has been inserted and turns it off after the set period of exposure has elapsed. The firm states that two minutes will generally suffice.

The unit was investigated in a clinic acceptable to the Council and was reported only fairly satisfactory. The investigator reported that insulated electrodes are not new to the profession.

One advertising pamphlet was submitted, "Superfluous Hair blights the happiness of many a woman." The advertisement contains several questionable statements. "Galvanic depilation originated for ingrown eyelashes. Unsuccessful in hypertrichosis"; "Depilation by the galvanic needle . . . more likely than not resulted in a permanent disfigurement worse than the original." In the opinion of the Council, it is the operator rather than the machine that is responsible for scarification, if present.

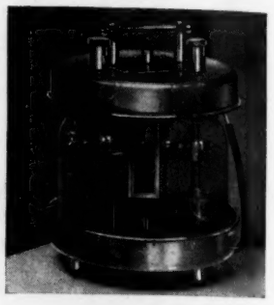
The advertisement reads that "courses are given by expert instructors." If individuals take short courses in the technic of depilation and they do not operate under the direction of physicians, such individuals may do much harm.

In view of the foregoing report, the Council on Physical Therapy voted to reject the Marton Galvanic Apparatus for inclusion in its list of accepted devices because the unit did not perform satisfactorily and, in addition, the advertising matter distributed with it contains misleading, unwarranted or exaggerated statements.

WISCONSIN OXYGEN HUMIDIFIER ACCEPTABLE

Manufacturer: Scanlon-Morris Company, Madison, Wis.

The purpose of the Wisconsin Oxygen Humidifier is to add sufficient water vapor to oxygen administered by the oropharyngeal catheter method to supply moisture to the mucous membranes. It is equipped with a water gage to register the flow in liters per minute. The equipment consists of three quart-size mason jars resting on a metal tray (9 inches in diameter with one-half inch edge) with a similarly shaped cover bolted to a center stem to hold the jars in place. A convenient carrying handle is supplied. Quart-size mason jars are used, to permit quick replacement in case of breakage. These jars screw into standard tops fastened to the cover of the humidifier. Metal parts are chrome finished. Rubber tubing connects the humidifier to the oxygen tank and to the catheter.



Wisconsin Oxygen Humidifier.

The pressure of the tank oxygen is reduced by means of the Linde Oxygen Therapy Regulator, Type R-51 (accepted by the Council on Physical Therapy, THE JOURNAL, June 9, 1934, p. 1941). The oxygen then passes through the humidifier jar, which has been previously filled with water to a marked level. Here a mixing chamber containing porcelain beads breaks it into fine bubbles calculated to pick up all the moisture possible. In the next jar there is a water flow gage to serve as an additional check on the cylinder flow gage, indicating the approximate flow in liters per minute. The firm claims that the additional gage is important because the spring type may still register flow in spite of complete obstruction, whereas the water type indicates no flow under similar circumstances. A third jar is provided to trap any excess water droplets so that they will not be carried to the patient. The flow gage jar and the humidifier jar are equipped with filling cups to permit ready replacement of water that is removed by evaporation.

The unit was submitted to a qualified investigator appointed by the Council. The evidence submitted by the firm was examined carefully and the device was tried clinically and found to give satisfactory service.

In view of the foregoing report, the Council on Physical Therapy voted to include the Wisconsin Oxygen Humidifier in its list of accepted devices.

ABDOMINAL SUPPORTS, CORSETS, SPECIAL SUPPORTS AND TRUSSES

At its annual meeting, January 13-14, the Council on Physical Therapy discussed the question of further consideration of abdominal supports, corsets, special supports and trusses. After due deliberation, the Council voted to discontinue its activity with regard to these products. It was pointed out that certain fundamentals about the construction and fitting of these products are not given careful attention and that such devices, useful for therapeutic purposes, should be prescribed individually.

In the opinion of the Council, the therapeutic value of these products is achieved only when they are fitted properly to the individual patient from an anatomic and physiologic point of view. It was the opinion of the Council, after careful deliberation, that corsets and abdominal supports, as they are now sold and fitted, do not receive the attention of specialists and that the therapeutic purpose for which they were originally considered by the Council has been lost sight of.

Therefore the Council will no longer give consideration to various makes of abdominal supports, corsets, special supports and trusses (effective at once) but will sponsor a series of articles relative to the use of these appliances from the standpoint of orthopedic surgery. The Council will ask those firms having accepted products to delete the seal or any mention of Council acceptance from their advertising matter and descriptive literature by Jan. 1, 1940.

PYREXON INFRA-RED HEAT RAY APPLICATOR NOT ACCEPTABLE

Manufacturer: Pyrexon Ray Corporation of America, 331 Fourth Avenue, New York.

The Pyrexon Infra-Red Heat Ray Applicator was submitted for consideration of the Council on Physical Therapy by the Pyrexon Ray Corporation of America. The heat applicator is a relatively small portable baker for use in the home or hospital. The Home Model measures approximately 16½ by 12 by 5 inches. It weighs about 6½ pounds. The heating element is concealed in a housing consisting of copper sheeting stretched across a wooden frame with asbestos protective covering between wood and copper, and also between copper and the patient. The firm states that this type of covering prevents baking or scorching the skin and permits the heat to penetrate into the tissues without much surface effect.

There is a two coil heating element, one part rated at 100 watts, the other at 75 watts and both at 110 volts. The power input is approximately 175 watts at full load. One of the coils is attached to a thermostat, which is calibrated at 145 F. It is placed on top of the thin insulated packing. The thermostat cuts off the 75 watt coil, thus leaving the device running on 100 watts when the temperature becomes too high.

Physical data presented by the firm indicate that the burners generate infra-red radiation at approximately 85,000 angstroms in wavelength.

In the advertising pamphlet submitted, "Presenting the Pyrexon Heat Applicators for Home Use," it is recommended for use in cases of sciatica, lumbago, neuritis and contusions. Critical evidence to support the efficacy of this device when used therapeutically to treat these conditions has not been submitted.

The baker itself was investigated in a clinic acceptable to the Council. The report stated that the baker must be in contact to secure necessary heating and that heating effects were not as comfortable as with other bakers. The supporting legs were not secure.

In view of the foregoing report, the Council on Physical Therapy voted not to include the Pyrexon Infra-Red Heat Ray Applicator in its list of accepted devices because the unit is not an efficient heater and it is advertised in a manner which is not in the interest of the public welfare.

Council on Pharmacy and Chemistry

REPORT OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.

PAUL NICHOLAS LEECH, Secretary.

ANNUAL MEETING OF THE COUNCIL ON PHARMACY AND CHEMISTRY

The Council on Pharmacy and Chemistry of the American Medical Association held its thirty-fourth annual meeting at the Association headquarters Friday, March 17, 1939. Those in attendance were Drs. David Barr, J. Howard Brown, S. W. Clausen, H. N. Cole, C. W. Edmunds, Morris Fishbein, E. M. K. Geiling, Ernest E. Irons, Paul Nicholas Leech, Perrin H. Long, G. W. McCoy, Stuart Mudd, E. M. Nelson, W. W. Palmer, William C. Rose, Elmer L. Sevringhaus and Torald Sollmann. In addition, the following members of the Council on Foods attended the meeting: Dr. George R. Cowgill, Dr. James S. McLester, Dr. Tom Spies and Dr. Franklin C. Bing.

Dr. Torald Sollmann was reelected chairman of the Council and Dr. W. W. Palmer was reelected vice chairman.

Among the many items discussed, the following may be of interest both to physicians and to manufacturers:

Liver Preparations.—Standardization of liver preparations, both U. S. P. preparations and nonofficial preparations, was the subject of discussion. The Council voted that a suitable statement of standards referring to the method of determining potency under the auspices of the U. S. P. Anti-Anemia Preparations Advisory Board be prepared with a view of substitution for the detailed descriptions now appearing in New and Nonofficial Remedies.

Antiseptics and Disinfectants.—The referee for antiseptics discussed the necessity of informing the medical profession concerning the new evaluation of bacteriostatic powers of the mercurial preparations. It was found that many of these preparations, investigated in the laboratory of one of the referees for the Council, would not kill bacterial spores within twenty-four hours' exposure under relatively ideal conditions. Since these bacteriostatic substances are not bactericidal in the pure state it would not be expected that they would be more active in the presence of organic serum. This led to further investigation, on which the conclusion has been reached that such products may have distinct usefulness because they are highly bacteriostatic and will prevent growth, are good preservatives in biologic products and may even be good antiseptics, when that term is defined as something which is not necessarily highly germicidal. They may be considered to have "disinfectant" rather than "germicidal" properties. It seemed probable that phenylmercuric subnitrate, in which the mercury is attached apparently to a different ion, has essentially the same degree of activity as the other mercurials.

The topic of inadequacy of phenol coefficient tests for the evaluation of antiseptics or disinfectants was presented to the Council by one of the referees. It was pointed out that the following paragraphs from circular No. 198 of the United States Department of Agriculture has frequently been overlooked by those interested in evaluation of bactericidal and bacteriostatic agents:

> There are certain types of germicidal agents, such as many of the mercury compounds, which give very high results by phenol coefficient tests. Due to the high inhibitory value of such substances in preventing growth in the subcultures, these figures are frequently misleading. For germicides used in the disinfection of such objects as surgical instruments, this is of particular importance and must be taken into account. Failure to appreciate this characteristic of certain compounds is much more likely to lead to error when Staphylococcus aureus is used rather than Eberthella typhi as the test organism. That false values may not be obtained for products of this type, or for any other disinfectant giving suspiciously high results, the subcultures should contain very large amounts of medium or they should be retransferred by carrying at least four loopfuls from the first subculture to a second tube of broth, as recommended by Shippen.
>
> Other groups of disinfectants in common use, for which the phenol coefficient method of testing is not well adapted, are those compounds containing chlorine as the active agent as well as oxidizing agents in general. These are affected so materially by the presence of organic matter that a phenol coefficient statement may grossly misrepresent their value under practical conditions of use and is very apt to be misleading to the consumer when placed on the label.

In the case of mercurial disinfectants an unduly high and misleading phenol coefficient is given, because the retransfer method was omitted. The same is true of certain silver compounds. It was further pointed out that any bacteriologic tests for mercurial compounds and the like alleging bactericidal properties should be made under conditions of actual application to supplement a test under simplified and arbitrary conditions. For instance, it has been found that mercurials are rendered completely inert bacteriologically by the addition of relatively larger amounts of normal horse serum, and therefore to get a therapeutic result in serum would require many times the lethal dose of a mercurial.

In view of this discussion the Council voted that a further statement be published at a later date reemphasizing that the phenol coefficient is an inadequate basis for judging the antiseptic value of nonphenolic agents and needs to be supplemented by tests under conditions of actual use. It was also pointed out that the same necessity for evaluating antiseptic substances in every possible way by at least approximating the actual conditions of use applies also to various dusting powders. Some of the well known nonaccepted dusting powders were found by tests to be wholly inactive under certain conditions when tested by more critical methods.

The word "preservative" was defined by the Council (for purposes of declaring the presence of preservatives on the labels of serum and vaccines and the like) as follows: "a preparation present in, or added to, a product for the purpose of destroying and/or inhibiting the multiplication of micro-organisms."

Revised Edition of Glandular Therapy.—The Council considered radical revisions of the book on glandular therapy, par-

ticularly in view of the newer advances in this field since the first edition, published at the close of 1935. The Council authorized the editorial committee to confer and to ask various authorities in respective fields to cooperate in this matter.

Digitalis.—The matter of digitalis, and particularly the use of such terms as "digitalis unit," "cat unit" and the like received attention. The Council voted that the subject be given further consideration.

Contraceptives.—The Councils' Committee on Contraceptives reported progress in the consideration of this subject. The report of this committee appears in the annual Reports of Officers (The Journal, April 8, p. 1358).

Labeling of Vitamin Dosage in Terms of Drops.—It was brought out that the drops of vitamin preparations of various manufacturers vary considerably because of the various types of droppers with the preparations. It is therefore hard to make comparative estimates of the relative potency of the products in terms of the prescribed dosages. There has been a tendency on the part of some of the manufacturers to exploit the claim that their bottle of vitamin preparation holds more drops than other bottles. To overcome in part this tendency, the Council voted that the label of liquid preparations containing vitamins should indicate the correct unitage of the product in terms of units per gram, or per cubic centimeter, as may be proper, and in addition that the approximate number of units yielded by a drop from the dropper provided be indicated.

Thiamin Chloride.—The Council voted to recognize the higher unitage for thiamin chloride, namely, a gram of crystalline thiamin chloride (crystalline vitamin B_1 [hydrochloride]) contains 333,000 U. S. P. units. The Council, therefore, announces that it will recognize claims for this unitage for the crystalline substance.

Proposed Names for New Vitamins.—The Council again pointed out the necessity of careful choosing by investigators of new names for vitamins which will not conflict with the rules of the Council on nomenclature, particularly with regard to therapeutically suggestive names. The Council has arranged for cooperative consideration with two scientific societies concerned and trusts that when scientific names are coined for such vitamins as vitamin K and others after the substance is isolated the selection will be one of an acceptable type.

Barbituric Acid and Its Derivatives.—The Council was asked by the House of Delegates to report on certain matters in reference to barbital and barbital derivatives. The first report has already been published in The Journal ("A Study of the Promiscuous Use of the Barbiturates," April 8, p. 1340). There is in preparation a second report on data collected from hospitals in various cities. The report will give information as to the reasons for addiction, duration of the addiction and frequency of use. It was pointed out that there are still certain data needed before the second report can be published.

Medical Patents.—The Council discussed informally the conference on medical patents held previously but took no action.

Pharmacopeial Convention of 1940.—It was called to the attention of the Council that the pharmacopeial convention will be held in 1940. It was thought advisable that The Journal emphasize at an appropriate time the importance of the medical profession's participating in the pharmacopeial convention and that this importance be stressed to the various medical schools and universities and other groups that send delegates to the convention; that there is need for revision of the methods of the pharmacopeial convention. It should be further emphasized that the Board of Trustees of the American Medical Association has authorized adequately close cooperation with the board of trustees of the U. S. pharmacopeial convention with a view to correcting some of the undesirable features which were noted in the convention in 1930.

Crystalline Zinc Insulin.—The Council discussed extensively the complex problems concerned with this subject. Certain important actions were taken which may be the subject of a separate report.

Aminophylline in Treatment of Diseases of Coronary Artery.—Statements in medical literature that aminophylline is effective in reducing the number and severity of attacks in disease of the coronary artery were reported. The referee felt that the evidence is not sufficient to justify any change in the therapeutic status of the product. The Council concurred.

Sulfapyridine.—The Council gave further consideration to sulfapyridine and endorsed the reports of the referees that sulfapyridine be accepted for inclusion in New and Nonofficial Remedies (for description, see The Journal, May 6, p. 1831). The topics discussed under this heading included the name, toxic reactions, estimated dosages, and reports of and the reason for the present high prices of this product.

Immune Globulin.—The Council voted that necessary steps should be taken for reinvestigation of this product with relationship to the matter of the name, to increased uses and to other points that are of importance, including a report on the various purified fractions of the globulin as related to its actions.

Therapeutic Research.—The Council voted that the Committee on Therapeutic Research be thanked formally for its painstaking effort and for the active productivity of the work which it fosters. A concise report of the work of the Committee on Therapeutic Research appears in the annual Reports of Officers, The Journal, April 8, p. 1380.

Acquisition of Pharmaceutical Concerns by Patent Medicine Interests.—The Council gave further attention to the question of acquisition of pharmaceutical concerns by patent medicine interests. Several examples were discussed but no action was taken. The Council decided however to continue its previous policy, namely, to be very watchful of companies acquired by nostrum interests or closely associated financially with nostrum interests. In those instances in which the Council has information that the best interests of either the public or the medical profession are being jeopardized by a house under such control and having Council-accepted products, immediate action will be taken, particularly in relation to the application of rule 11 to the firms concerned.

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

Paul Nicholas Leech, Secretary.

MERCUPURIN.—An aqueous solution containing molar equivalent quantities of the sodium salt of β-methoxy-γ-hydroxymer curi-propylamide of trimethyl cyclopentane, dicarboxylic acid and of theophylline. (The mercurated organic acid is the same as that of which mercurin-N. N. R. is the partial sodium salt. Its specific name is N(γ-hydroxymercuri-β-methoxy) propyl-d-α-camphoramic acid and its structure is given under mercurin). Evidence is given that the theophylline in mercupurin is chemically combined with the mercurial.

Actions and Uses.—Mercupurin is a potent diuretic. It is perhaps less toxic and more active than the purine-free mercurial diuretics. It has been demonstrated that when theophylline is combined with the mercurial, sloughs and venous thrombosis occur with less frequency and severity. Clinical experiments suggested that the presence of theophylline enhances the rate and completeness of absorption, so that the drug is effective and well tolerated by intramuscular as well as intravenous administration. Studies by a number of investigators give indication that Mercupurin is an efficient diuretic. Supplementary administration of acidic salts, such as ammonium chloride, tends to increase the diuresis.

Mercupurin is used to remove excess fluid in edema of congestive heart failure, nephrosis, and cirrhosis of the liver with ascites. It is contraindicated in advanced chronic nephritis and acute renal disease. Care should be taken not to restrict the intake of sodium chloride too drastically, as copious diuresis may give rise to the symptoms associated with hypochloremia.

Dosage.—Mercupurin is supplied in a concentration of 10 per cent (weight/volume) with respect to the sodium salt of the mercurated organic acid and 3.53 per cent with respect to anhydrous theophylline. Each cubic centimeter of mercupurin represents 39 mg. of mercury in non-ionizable form.

Manufactured by Chinoin Laboratories. Ujpesa, Hungary (Campbell Products, Inc., New York, N. Y., distributor). U. S. patent 2,116,872 (May 10, 1938; expires 1935). U. S. trademark No. 315,683.

Ampoules Mercupurin, 1 cc.: Each ampule contains 1.1 cc. of mercupurin.

Ampoules Mercupurin, 2 cc.: Each ampule contains 2.2 cc. of mercupurin.

Mercupurin is a nearly colorless, odorless, bitter tasting aqueous solution whose p_H lies between 8.5 and 9.0. The specific gravity of the ampule solution is not less than 1.068 nor more than 1.072 at 25 C. The index of refraction at 25 C. for the D line of sodium is 1.3550 (0.0002). The observed optical rotation of the ampule solution is $\alpha = -4.5$ (± 0.1) when measured in a 200 mm. tube using a sodium lamp.

Transfer 5 cc. of the ampule solution, accurately measured, to a tared beaker and evaporate the solution to dryness over phosphorus pentoxide in a vacuum desiccator: the total dry residue is not less than 135 nor more than 145 mg. per cubic centimeter. Acidify 5 cc. of the ampule solution, accurately measured, with 1 cc. of concentrated sulfuric acid, carefully evaporate the excess liquid and incinerate in an electric muffle furnace to constant weight using 900 C. as the end temperature for not more than ten minutes: the amount of sodium sulfate is not less than 13 nor more than 15 mg. per cubic centimeter. Test for free mercuric and other heavy metal ions, sulfates, halides and arsenic as described under mercurin (which see) using 2 cc. of ampule solution. Decompose about 10 cc. of ampule solution with hydrogen sulfide as described under mercurin: the same crystalline product is obtained, namely N-allyl-d-α-camphoramic acid, m. p. 158 C.

Determine nitrogen by the Pregl micro Kjeldahl procedure: each cubic centimeter of mercupurin contains not less than 13 nor more than 17 mg. of nitrogen. Pipette 5 cc. of the ampule solution into a platinum dish and determine the mercury content as described under mercurin (which see): each cubic centimeter contains not less than 38 nor more than 40 mg. of mercury. Dilute 5 cc. of mercupurin, accurately measured, with 15 cc. of water; add 5 cc. of 10 per cent ammonium hydroxide and 6 cc. of a 10 per cent solution of silver nitrate. Heat gently on the water bath until the precipitate coagulates. Filter, wash with hot water, and dissolve the precipitate in 10 cc. of 10 per cent nitric acid. Dilute to 100 cc. and titrate with 0.1 normal ammonium thiocyanate solution using two drops of a saturated solution of ferric ammonium sulfate as indicator: 1 cc. of 0.1 normal ammonium thiocyanate solution is equivalent to 18.0 mg. of anhydrous theophylline. Mercupurin contains not less than 34 nor more than 37 mg. of anhydrous theophylline per cubic centimeter.

IODOBISMITOL WITH SALIGENIN (See New and Nonofficial Remedies, 1938, p. 151).

Ampoules Iodobismitol with Saligenin, 2 cc.: Each ampule contains from 0.115 to 0.133 Gm. of sodium iodobismuthite (equivalent to 0.024 to 0.027 Gm. metallic bismuth) and from 0.318 to 0.258 Gm. of sodium iodide dissolved in propylene glycol containing 4 per cent saligenin and 0.1 per cent glacial acetic acid.

Iodobismitol with Saligenin, 50 cc. Bottle: Each 2 cc. contains from 0.115 to 0.133 Gm. of sodium iodobismuthite (equivalent to 0.024 to 0.027 Gm. of metallic bismuth) and from 0.318 to 0.258 Gm. of sodium iodide dissolved in propylene glycol containing 4 per cent saligenin and 0.1 per cent glacial acetic acid.

Manufactured by Cutter Laboratories, Berkeley, Calif., by license of Stanford University. U. S. patent 1,890,508 (Dec. 13, 1932, expires 1949) and 1,927,210 (Sept. 19, 1933, expires 1950). No U. S. trademark.

Council on Foods

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COUNCIL ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION AND WILL BE LISTED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED.

FRANKLIN C. BING, Secretary.

FOULDS' EGG ALPHABETS

Manufacturer.—The Foulds Milling Company, Libertyville, Ill.

Description.—Noodles in the shapes of letters of the alphabet, prepared from durum flour, egg yolk, water and salt.

Manufacture.—Durum flour, egg yolk, salt and water are mixed and kneaded under corrugated steel rolls, run through dough breaks (rollers) and forced through dies to form the desired shapes, dried and packaged.

Analysis (submitted by manufacturer).—Moisture 10.2%, total solids 89.8%, ash (salt free) 0.7%, sodium chloride (NaCl) 1.1%, fat (ether extract) 5.3%, protein (N × 6.25) 15.3%, lipoid phosphoric acid (dry basis) (P_2O_5) 0.13%, estimated egg solids on the moisture-free basis 6.6%, carbohydrates (by difference) 67.4.

Calories.—3.8 per gram; 108 per ounce.

CARIBBEAN BRAND STRAINED BANANAS

Manufacturer.—Caribbean Canning Company, Inc., 1332 Whitney Building, New Orleans.

Description.—Canned, strained, ripe banana.

Manufacture.—Green bananas are stored in a dark humid atmosphere, first at 20 C. and later at 23.9 C. until the desired degree of ripeness is developed. This is indicated by the odor of the fruit and by the complete disappearance of green color and the appearance of flakes of brown on the deep yellow skin. The ripe fruit is peeled, mechanically sliced, dipped in sugar syrup to prevent discoloration, drained, strained and packed into cans. The filled cans are heated for five minutes at 100 C., sealed and heat processed.

Analysis (submitted by manufacturer).—Moisture 74.5%, total solids 25.5%, ash 0.6%, fat (ether extract) 0.7%, protein (N × 6.25) 1.3%, crude fiber 0.4%, carbohydrate other than crude fiber (by difference) 22.2%, reducing sugars as invert 7.7%, sucrose (copper reduction method) 12.6%, starch (by difference) 1.9%, acidity as malic 0.25%, p_H 4.88.

Calories.—1.0 per gram; 28.4 per ounce.

N B C BRAN

Manufacturer.—The National Biscuit Company, New York.

Description.—Milled wheat bran; flavored with sucrose, malt extract, salt and water extract of prunes.

Manufacture.—Wheat bran, which has been run through a high-speed hammermill, is mixed with water, sucrose, prune concentrate, malt extract and salt, cooked in a revolving steam pressure cooker, ground and run through forming machines and a screen scalper to form "nuggets," which are cooled, dried, toasted and packaged.

Analysis (submitted by manufacturer).—Moisture 2.7%, total solids 97.3%, ash 6.4%, fat (ether extract) 2.1%, protein (N × 6.31) 12.0%, crude fiber 8.8%, carbohydrates other than crude fiber (by difference) 68.0%, reducing sugars (as dextrose) 2.03%, sucrose 12.5%, iron (Fe) 0.018%, phosphorus (P) 1.36%.

Calories.—3.39 per gram; 96 per ounce.

Vitamins.—Approximately 1.5 international units of vitamin B_1 per gram.

(1) DAIRY DISTRIBUTERS BRAND EVAPORATED MILK
(2) DAIRY DISTRIBUTERS BRAND VITAMIN D EVAPORATED MILK

Manufacturer.—Watertown Milk Cooperative, Watertown, Wis.

Distributor.—Dairy Distributers, Inc., Milwaukee, a wholly owned subsidiary of the Watertown Milk Company.

Description.—(1) Canned unsweetened evaporated milk. (2) Canned unsweetened evaporated milk fortified by the addition of 325 U. S. P. vitamin D units from Vitex Concentrate per 14½ ounce can.

Manufacture.—Whole milk is carefully inspected and tested at the company plant by state and company inspectors before acceptance. The milk is preheated and filtered. Vitex Vitamin D Concentrate to the extent of 325 U. S. P. units per 14½ ounce can of the finished evaporated milk is added for the vitamin D milk only. The milk then is evaporated under vacuum, homogenized, cooled, standardized to meet government requirements, filled into cans, sealed and sterilized.

Analyses (submitted by manufacturer).—(1) Moisture 74.1%, total solids 25.9%, ash 1.6%, fat 7.8%, protein (N × 6.38) 7.8%, lactose (by difference) 8.7%, total acidity as lactic 0.3%. (2) Moisture 74.0%, total solids 26.0%, ash 1.6%, fat 7.8%, protein (N × 6.38) 7.8%, lactose (by difference) 8.8%, total acidity as lactic 0.3%.

Calories.—(1) and (2) 1.4 per gram; 39.8 per ounce.

CRADLE BABY BRAND STRAINED AND SEEDLESS BLACK RASPBERRY JAM

Manufacturer.—Glaser, Crandell Company, Chicago.

Description.—Canned strained black raspberry jam sweetened with sucrose. The jam may contain small amounts of added acid and/or pectin.

Manufacture.—Black raspberries from Michigan are handled as described for Cradle Baby Brand Strained and Seedless Grape Jam (THE JOURNAL, April 8, 1939, p. 1343).

Analysis (submitted by manufacturer).—Moisture 31.3%, total solids 68.7%, water insoluble solids 0.4%, water soluble solids 68.3%, ash 0.3%, protein (N × 6.25) 0.4%, crude fiber 0.1%, carbohydrates other than crude fiber (by difference) 67.1%, acidity 0.8%.

Calories.—2.70 per gram; 77 per ounce.

THE CASE OF BRINKLEY VS. FISHBEIN

PROCEEDINGS OF A LIBEL SUIT BASED ON AN ARTICLE PUBLISHED IN *HYGEIA*

(Concluded from page 2153)

DEPOSITION OF LESLIE DYE CONN

The deposition of Leslie Dye Conn indicates that he is a resident of Little Rock and that he was graduated from Vanderbilt University School of Medicine in 1907, having previously had three years at Gate City Medical College, Texarkana, Arkansas, in 1901, 1902 and 1903. He was licensed to practice in Arkansas and Oklahoma in 1903, and in Texas in 1913. He was employed by Dr. Brinkley in Del Rio to do physical examinations, and he is now employed in Little Rock doing rechecks on the patients. On cross examination, he stated that complete records are kept of the patients and that about 90 per cent of the patients have shown improvement. It was his opinion that the operations were, in general, successful.

TESTIMONY OF C. B. WARDLOW

C. B. Wardlow testified that he lives in Del Rio, Texas, and is in the ranch business, managing a wool house, and that the reputation of Brinkley was good. On cross examination, it was brought out that he is in partnership with Brinkley.

TESTIMONY OF F. M. ROSE

F. M. Rose stated that he is in the ranch business and has practiced dentistry for fourteen years, and that the reputation of Brinkley is good.

TESTIMONY OF ORVILLE BARNES CHANDLER

Orville Barnes Chandler stated that he is a physician, living in Little Rock, Ark., and working in the Brinkley Hospital. The testimony proceeded:

Q.—In what capacity? *A.*—As physician working in the building in charge of the x-ray and laboratory work and also I am doing the post-operative surgical dressing, checking out patients and advising them what their diet should be after leaving and the medications that are necessary.

Q.—Now, Doctor, let's get what your medical education, what medical education you have had, please, sir? *A.*—Well, I had five years in Vanderbilt University with the degree of Doctor of Medicine on the 14th day of June 1916.

Q.—And then what other studies, if any, have you had subsequent to that time? *A.*—Well, following my graduation I took my internship in Vassar Hospital, Poughkeepsie, New York. That was an eighteen months internship, and I served fourteen months of it and quit the internship and went in the army; I was called as First Lieutenant in the Medical Corps of the army. I went to Fort Riley and had my training there, squads east and west, and from there I was assigned as examiner in x-ray in that camp, and after examining all of the officers and men that claimed x-ray experience and turning in a report on their examinations I was sent to New York, the Cornell School of Military Roentgenology for further instruction as an assistant instructor myself. From there—

Q.—Doctor, tell us what roentgenology is, please, sir, explain that to the jury? *A.*—Well, every one knows what x-rays are, at least knows of them. The x-ray was discovered by Conrad Roentgen of Wurzburg, Bavaria, in 1895 or '96. The medical profession, in order to pay him courtesy, the courtesy that was due him for his scientific work, called it the roengen ray instead of x-ray, so roentgenology is purely and simply a discourse on x-ray.

Q.—All right, go ahead, Doctor, and tell us what further studies or experience you have had? *A.*—I went into the Louisville base hospital at Camp Taylor, Kentucky, as x-ray man in the base hospital, x-ray department, along with others; served there from April until the 1st of September and then from there I was sent to North Carolina and worked there along with Stephens and Moschcowitz, who were two of a committee of three from the surgeon general's office to study empyema, and their x-ray man was ordered away and I was ordered to take his place. We worked there until we cleaned up the empyema cases and then flu broke out and I took charge over the base hospital at Camp Dodge, commencing work on the 4th of October. I stayed there until the 19th of the next July, through the flu epidemic and the gradual decline of the size of the hospital. Then they ordered me from Camp Dodge to Fort McPherson, Georgia, to help take care of those that were coming back. I stayed there from the 21st of July until about the 1st of October, I don't remember the exact date of the order now, but it was around that time, and we were ordered, they ordered me to Hampton, Virginia, to the Old Soldiers' Hospital, which had been turned into a hospital for shell shocks. I was there about a month and ordered to Governors Island for discharge.

Q.—You then received your discharge from the army? *A.*—Yes.

Q.—Now, then, Doctor, since that time have you had any special occasion for study in any clinics or elsewhere? *A.*—Well, I had had so much x-ray work in the army service I figured I would follow that in civil life. I went back to Des Moines, where my family was, and made arrangements for office space and bought an x-ray machine from the Victor x-ray people of Chicago, to be delivered as soon as they could fill the order. I then went back to New York for postgraduate work in skin and cancer work, because I figured I would need it in days to come.

Q.—Now, Doctor, then did you or not continuously from that time until the time you went with Dr. Brinkley engage in the practice of your profession as a physician and surgeon? *A.*—I have been in medical practice every day from that period all along.

Q.—Yes, sir. *A.*—With the exception of about, well, November and December and about half of January, when I first came to Texas I was hanging around San Antonio waiting for the report from Washington to get back, and I was finally informed that I was crowding the age limit too much and the war college had ruled against me on account of age, in regard to my getting back in the army, and then I had to get out and start digging for myself in private life. I started on the 18th of January in South Texas in the general practice.

Q.—Then when was it that you went with Dr. Brinkley? *A.*—Well, that was about, it will be three years the 6th of this coming April.

Q.—Then in April of 1936 was that, Doctor? *A.*—It will be. It was the 6th of April, 1936, that I commenced working for him.

Q.—And, now, tell us, Doctor, what societies or organizations you have been a member of in the past and explain just what those are? *A.*—Well, I have been a member of the North American Radiological Society, a member of the American Medical Association, both the state and county societies, while I was in the Twin Cities. I was a member of the Twin Cities Urinological Society. Those sections where I was I was hooked up with the medical men wherever I was working.

Q.—What do you mean by the Twin Cities, Doctor? *A.*—Minneapolis and St. Paul.

Q.—Was that a society composed of urinologists? *A.*—Not all urinologists, but men interested in urinology.

Q.—Now, then, Doctor, what has been your work and the nature of your work since you have been with Dr. Brinkley, please? *A.*—I was hired by Dr. Brinkley to do his x-ray work and was asked if I would be willing to help out some with the other work if I wasn't overworked in the x-ray department. And I was immediately assigned to do surgical dressings, which I have continued on through. I still have charge of the x-ray work, which I read the plates and make diagnoses and fluoroscopic work. I do that myself. I take care of the diagnoses work, but I don't do the technical work of making the plates. I supervise it.

Q.—Is all of the laboratory work, including the x-ray and the fluoroscopic work and the pathological work done under your supervision? *A.*—Well, I am normally in charge of the laboratory. They have a technician that is a well qualified young fellow that does the technical work and looks after the tests and everything of that kind himself.

Q.—Who is that, please? *A.*—Mr. Kirschberg.

Q.—You mean with reference to the pathology? *A.*—He looks after the clinical and pathological work, and the only time that I am called in is perhaps when he wants me to O. K. his findings on pathological tissue or something like that.

Q.—Now, Doctor, tell us how the hospital is equipped for doing that sort of work? *A.*—Well, we have modern equipment, the latest type of Westinghouse shockproof units in the hospital where I am.

Q.—Is all of that, during the time that you have been with Dr. Brinkley has all of that equipment been kept up to the best standard possible? *A.*—The equipment that I am working with or have in my hands now was bought new when we opened the hospital in Little Rock. The instruments that I worked with at first here in the Roswell Hotel were shipped to Little Rock later and put in the Country Club Hospital, and that way I have an entirely new unit to work with now.

Q.—But was the equipment which was here in the hospital here of the best type available? *A.*—A Victor diagnostic outfit in good shape, I kept it that way. If anything was needed I added to it in the way of accessories and things like that if they were needed.

Q.—Has Dr. Brinkley given any instructions with reference to any new equipment as it may be needed or any new type or changes which may come out from time to time in the type of equipment you have occasion to deal with in your work? *A.*—He told me he wanted me to keep my laboratory up to date and he has never so far refused to get anything I asked for in the way of new equipment or new accessories.

Q.—Were those his instructions from the first time you went with him? *A.*—That has been my understanding right along.

Q.—Have you or not during the time that you have been with Dr. Brinkley had occasion to observe and examine the patients who come there to the hospital? *A.*—Certainly.

Q.—Doctor, have you or not had occasion to observe and know their condition when they came there? *A.*—I have examined the patients, I was the only examiner in the Little Rock Hospital for the first month of the hospital's existence.

Q.—And did you or not also make examinations here at Del Rio? *A.*—Nothing; only the x-ray is all I had anything to do with here.

Q.—And have you had opportunity to examine the patients upon their discharge from the hospital after their operations? *A.*—I check them all out.

Q.—I will ask you to state, Doctor, from your experience with and observation of the patients there whether or not the operation for prostatic trouble which is done by Dr. Brinkley or under his supervision is or not, in your opinion, beneficial to the patients? *A.*—Seeing the patients as they go out, hearing their statements and noting the size of their prostate and condition of it, comparing it with what the record shows they had when they came in, I would have to say there was a greater portion of them showed some improvement.

Q.—Then is or not, in your opinion, the operation beneficial to the patient? *A.*—Well, I should say so if that is the only thing they have had to get that improvement.

Q.—Have you or not also, Doctor, had occasion to examine the patients on return, on their returns at subsequent times? *A.*—Rechecks I have had a few, not many, because most of that work went out to the other hospital.

Q.—But you have had some occasion to make examinations for patients who returned for rechecks? *A.*—Yes, sir.

Q.—In your opinion, Doctor, is the operation generally successful? *A.*—Well, as far as I can see it is. There are certain types of conditions that it takes time, and at the end of seven days we can't—no one could expect to see a prostate that was 2 or 3 inches in diameter shrink up to its normal size in seven days' time unless it had been just a swollen prostate.

Q.—Well, such as you have seen on recheck? *A.*—You see, a person who comes in with three plus or three minus, a three plus or three minus prostate, a good large prostate that is boggy, more or less soft, swollen as it were, it may decrease quite a bit within a week's time. By the end of a year perhaps it is back to normal.

CROSS EXAMINATION

By Mr. Reynolds:

Q.—Dr. Chandler, as I understand it, now, you are doing just surgical dressing and then reading x-rays, is that it? *A.*—That is part of it; I am just generally checking out the patients and giving them their instructions to go home on.

Q.—Is it you who determines whether the patient is ready to leave the hospital? *A.*—Mainly; I notice any change, and if I don't feel they are in shape to be checked out I call attention of that to Dr. Osburn, and he is final on it.

Q.—How long are the patients generally there now? *A.*—Usually figure one week's time.

Q.—What types of incisions are you now dressing? *A.*—Skin incisions.

Q.—Where are they? *A.*—In the front part of the scrotum and one on the other side.

Q.—And what is the length of them? *A.*—After the skin is drawn up it is, perhaps, an inch to inch and a half.

Q.—Have you ever seen Dr. Brinkley perform his prostate operation? *A.*—No, sir, not close enough to tell anything about it; I pass through the room.

Q.—Has he ever told you completely what it is? *A.*—No, sir; I am not interested in that part of it in anyway.

Q.—Then, you really don't know what kind of treatment is being given to the patient so far as his operation is concerned? *A.*—Underneath the skin. I have treated the incisions after they were sewed up.

Q.—But you don't know the nature of the operation itself from first hand knowledge? *A.*—Not first hand, seeing or helping or anything of that kind; I couldn't tell you the details of the operation.

Q.—And you don't make any of the diagnoses, do you? *A.*—No, sir. I simply report what I find on the x-ray picture.

Q.—How many x-ray pictures a week do you imagine you read? *A.*—Right now?

Q.—Yes, sir, now? *A.*—Well, it is hard to say; perhaps, in rush weeks it would be thirty, forty or fifty a day.

Q.—Now, when a person comes in there for treatment do you always x-ray them irrespective of what they are there for? *A.*—The bladder area, yes, sir.

Q.—How many x-ray shots do you make? *A.*—Make one, drain the bladder, refill it with sodium iodide solution and make a second one as a routine.

Q.—Then when you read thirty or forty a day, that means there are fifteen to twenty new patients a day? *A.*—Maybe it would mean that and maybe not; if that same patient comes in and gets his two routine plates and gives a history of sinusitis, or something of that kind, maybe I have to x-ray his sinuses or heart condition, or something of that kind.

Q.—Dr. Brinkley doesn't treat heart conditions, does he? *A.*—No, sir; but we want to know the condition of the patient before we start anything.

Q.—Is it you who diagnoses whether or not there is cancer of the prostate gland? *A.*—That is made by the examining physician, and the final is by the laboratory check, if we are able to check up on it in any way.

Q.—What part of it is it that you do there in that connection? *A.*—Well, if we have a bioscopy made I sometimes have to pass on that, but that is all I have to do with it.

Q.—Are you the main one that passes on the bioscopy? *A.*—Yes, sir.

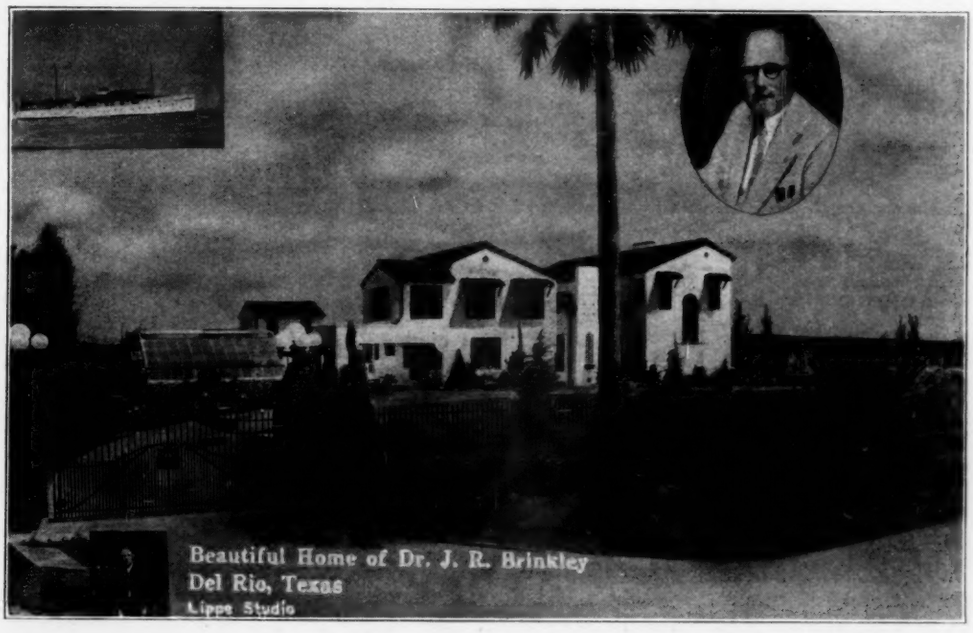
Q.—Incidentally, tell the jury what a bioscopy is so it is clear? *A.*—Well, it is hardly a good practice, but it is done by old medical men, surgeons, at least; you have to get a piece of suspected cancerous tissue with as little traumatism and aggravation of the original mass as possible, put it into a freezing machine, freeze it and then slice it in two thin slices and place those under the microscope, after they have been stained, and make the diagnosis.

Q.—And you yourself are the one that finally says "this man has a cancer of the prostate" or "he doesn't have"? *A.*—I would under those conditions, but a man can make a diagnosis, often times—

Q.—I mean where the bioscopy is done? *A.*—Yes, sir.

Q.—What is done with the patients that you find do have the cancerous condition? *A.*—I don't know. They are advised to have cancer treatment.

Q.—Not at your hospital? *A.*—No, sir.



Reproduction of a postcard sold in Del Rio.

Q.—As a matter of fact, they are sent to another doctor there in Little Rock, aren't they, or do you know? *A.*—They might be advised to go there, but I don't know as any of them are ever sent there; a man is allowed to go to who he pleases on that deal.

Q.—Doctor, how long has it been since you were a member of the North American Radiological Association? *A.*—Oh, I guess it was about—I don't remember the exact years on that, but along about 1928 or 1929.

Q.—You weren't a member for several years before you went to Dr. Brinkley, is that right? *A.*—I was a member from, I think it was, around 1922 until I had financial straits that just tied me down until I couldn't keep up the bills, that is all.

Q.—How was it that you happened to go to Dr. Brinkley? *A.*—I was left stranded down at San Antonio with a wife and three kids, and I started in trying to make a living in South Texas, and there was next to nothing to start with, and I bucked the game over at the little town of Weslaco in the Winter Garden the best I could, and then I went to Karnes City, and from there to Poteet and finally into San Antonio, and in my messing around when I stopped at Karnes City for a spell I met a young fellow by the name of Alvis working in a drugstore there, and I got him out of a rut and got him started, and he happened to drive into Del Rio and start working for Jim Shearn over here in a drugstore, and Dr. Brinkley's x-ray man flew the coop for some unknown reason, I don't know why, and this boy knew my financial straits and he wanted me to come over and do x-ray work because he heard that I did that, and that is how I got there.

Q.—Since you were a member of the Twin City Urological Society, I assume you have done work in that field? *A.*—Only the x-ray side.

Q.—You don't know anything about the theory of the secretions of the glands? *A.*—Most every doctor gets some theory in his school life, but that is all.

Q.—What is your understanding in the function of the gland as to where the male sex hormones are produced?

THE COURT:—I don't think you should go into anything like that with this witness.

Mr. Reynolds:—I will withdraw that.

Q.—Who is your laboratory man? *A.*—Garrett Kirschberg.

Q.—Have you ever heard of anything such as a licensed laboratory technician? *A.*—I have heard of a registered.

Q.—Not a licensed? *A.*—That is right.

Q.—Registered? *A.*—Registered with the International Society.

Q.—A registered laboratory technician? *A.*—Laboratory and urological technician, there are both; I don't remember the exact wording of the titles.

Q.—Now, you are on a straight salary with Dr. Brinkley *A.*—Yes, sir.

Q.—At the present time? *A.*—Yes, sir.

Q.—Doctor, in treating a person who has some residual urine, that urine is drawn off and that person feels many per cent better, doesn't he, a great deal better? *A.*—Temporarily, until it fills up again.

Q.—And in the ordinary course of events it is quite a little time before it fills up again, that is, an average case? *A.*—A few hours, perhaps.

Q.—Now, if you removed the residual urine for an elderly gentleman and gave him a week's rest in bed, why, without doing anything more he is going to be in much better shape, isn't he? *A.*—Possibly some better.

Q.—And what I want to know, Doctor, is it your opinion as a medical man that tying off of the efferent ducts between the testes and the epididymis has any effect whatever on the size of the prostate gland? *A.*—I don't know anything about that operation.

Q.—You have never heard of it in connection with the Brinkley Hospital? *A.*—I have heard of it, but I couldn't swear that it is done; I didn't see it.

Q.—Do you have any reason to believe it is not done? *A.*—No, sir.

THE COURT:—That is speculation.

RE-DIRECT EXAMINATION

By Mr. Morriss Sr.:

Q.—Doctor, how long did you say it would take the bladder to fill up if you were to empty the bladder, where a patient couldn't do it? *A.*—If you emptied the bladder and got it absolutely minus of anything, only the natural moisture on the inside there, and your kidneys were working it would be a few hours until he would have the same amount, and he wouldn't be able to pass but a little amount, and when he got his usual residue the overflow would pass.

Q.—That emptying doesn't have any immediate effect of curing a man? *A.*—No, sir. He specified that you keep him in bed a week and keep it empty.

Q.—Then, that way, would that be of any permanent benefit, likely, or would that be temporary? *A.*—Nature naturally repairs itself if you help it some, and he would be better off and be improved at the end of a week. That is what he asked me.

Q.—That wouldn't have anything to do with the reducing of the prostate gland? *A.*—I wouldn't think so.

Witness excused.

TESTIMONY OF L. C. CALDWELL

L. C. Caldwell testified that he operates the Val Verde Tourist Courts, that he is corporation judge of the city of Del Rio, and that the general reputation of Brinkley in the community is good. He stated that many of the patients coming to the Brinkley Hospital had stopped at his tourist courts.

TESTIMONY OF J. TRAVELSTEAD

J. Travelstead testified that he is editor of the Del Rio *Evening News* and that the reputation of Brinkley is good. On cross examination, he stated that he is a close friend of Dr. Brinkley's and that he had given Brinkley liberal space, and that Brinkley had bought liberal space in his newspaper.

TESTIMONY OF DR. J. A. MC DONALD

Dr. J. A. McDonald testified that he is a doctor of dental surgery, a member of various dental organizations, has lived in Del Rio twenty-one years and has known Brinkley since 1931 and that his reputation is good. On cross examination, he stated that he is the dentist for the Brinkley family.

TESTIMONY OF W. PAINTER

W. Painter stated that he is a bus operator, living in Uvalde, Texas, and has been engaged in such a capacity for fifteen years, and that the reputation of Brinkley is good and that he is a peaceable, law-abiding citizen. He also stated that he in his business has hauled patients in and out of Del Rio.

TESTIMONY OF JOHN DOBKINS

John Dobkins testified that he is in the automobile business in Del Rio and that the reputation of Brinkley is good. On cross examination he testified that Brinkley was one of his customers.

The defense then offered in evidence a considerable number of exhibits in the form of pamphlets, circulars and other materials issued by Brinkley, and also the book entitled "Life of a Man," written by Clement Wood.

TESTIMONY OF J. H. MC COY

J. H. McCoy testified that he is investigator for the firm of Loesch, Scofield, Loesch & Burke of Chicago, and that in the course of his investigation he met a man named Crawford in the penitentiary in McAlester, Okla.; that he interviewed Crawford and was present when Mr. Burke took the deposition for the American Medical Association and Mr. Jackson for Brinkley, Mr. Jackson representing Dr. Brinkley. Mr. McCoy stated that he had not at any time made any promise to Mr. Crawford, that he had not paid him any money and that he has never seen Mr. Crawford since the time the deposition was taken.

DEPOSITION OF LESLIE DYE CONN

Mr. Harrell, representing the American Medical Association, read additional material from the deposition of Leslie Dye Conn, as follows:

DIRECT EXAMINATION

Questions by Mr. Harrell:

Q.—Do all of those patients come to the country hospital rather than the city hospital? *A.*—Yes, sir. They're supposed to, at least. As far as I know, they do.

Q.—I mean by that they go out there for recheck? *A.*—Yes, sir.

Q.—And is there any one else at the Country Club Hospital, besides yourself, who conducts those examinations? *A.*—No, sir.

Q.—Those recheck examinations? *A.*—No, sir.

Q.—Is there any operating done out at the Country Club Hospital? *A.*—When they overflow up in town they do; once in a while.

Q.—Do they overflow up in town very often? *A.*—Very often? Why, doggone, we can't take care of them.

Q.—Business is booming, huh? *A.*—You ought to work a while and find out. Oh, we do take care of them, but then we are sure overflowed.

Q.—Doctor, the patients who come to the Country Club Hospital for recheck, for what ailments have those patients received medical attention or surgical attention? *A.*—For what ailments have they received—

Q.—Yes? *A.*—Those that I handle are for the prostate.

Q.—Those that you handle have all previously had operations for prostate? *A.*—Yes, sir—or take:: medical treatment for prostate.

Q.—Do you have many patients that take medical treatment for the prostate rather than surgical? *A.*—Not many.

Q.—Do you know what the medical treatment for the prostate is? *A.*—Yes, sir.

Q.—As administered by Dr. Brinkley? *A.*—Yes, sir.

Q.—Would you tell us what it is? *A.*—No, sir. It is not my privilege.

Q.—Well, why won't you tell us? *A.*—Because it was given to me in confidence, and I am keeping it that way.

Q.—Is it a secret treatment? *A.*—Well, if he wants you to know it he'll tell you. Now, that is all—

Q.—But, at any rate, you refuse to divulge it, is that right? *A.*—Yes, sir, that's right.

Q.—But you do know what it is? *A.*—I do—at least, I know what he told us.

Q.—Did he also tell you not to divulge it to any one? I mean—by "he," I mean Dr. Brinkley. *A.*—I can't tell you the conversation that took place—just don't remember it right now."

TESTIMONY OF DR. MORRIS FISHBEIN

Dr. Morris Fishbein was then called to the stand as a witness in his own behalf. He testified as follows:

DIRECT EXAMINATION

By Mr. Reynolds:

Q.—Dr. Fishbein, now, for the purpose of the record, you are the defendant in this case, again, Dr. Fishbein? *A.*—Yes, sir.

Q.—Doctor, have you ever authorized the expenditure of any funds, either your own or those of the American Medical Association, for the purpose of paying it to, giving it to or delivering it to a prospective witness in any legal proceeding? *A.*—Absolutely not.

Mr. Morriss Sr.:—We object to that as incompetent, irrelevant and immaterial to any purpose in this case.

THE COURT:—Overrule the objection.

Mr. Morriss Sr.:—Note our exception.

A.—Absolutely not.

Q.—Dr. Fishbein, prior to the time you came down here on this lawsuit had you ever heard of the deposition of James E. Crawford? *A.*—I had never heard of Mr. Crawford's deposition prior to the time I came to attend this suit.

Q.—Now, Dr. Fishbein, is there any recognized and recorded medical evidence that the goat gland implanted in the testes has the same effect of the administration of male sex hormones?

Mr. Morriss Sr.:—We object to that for the reason that it is not a matter that is proper at this time; the plaintiff had put on his case and the defendant put on its rebuttal and went into all of those matters at the time and put on their testimony, and the plaintiff has put on the rebuttal, and it is not proper now, of course, to seek the advantage of putting on this kind of testimony.

THE COURT:—I think it is proper to rebut Dr. Brinkley's testimony.

Mr. Morriss Sr.:—His testimony was in rebuttal, it was their rebuttal testimony, and if we are going to rebut back and forth—

THE COURT:—You can have sur-rebuttal, can't you?

Mr. Morriss Sr.:—I don't think it is proper.

THE COURT:—As I remember, when you had Dr. Brinkley on the stand he was asked about that and he said he was inclined to think that that was the effect of the insertion of those goat glands but that he may in his own enthusiasm, I believe he expressed it, have been mistaken.

Mr. Morriss Sr.:—This witness and other witnesses expressed their ideas about it.

THE COURT:—You can't close up their case, and they have a right to rebut your case if they want to.

Mr. Morriss Sr.:—We think it is not a proper practice after they had their case, a proper practice to undertake to go back on the stand after the plaintiff had closed the case in rebuttal.

THE COURT:—Dr. Fishbein has been on the stand once, and this makes the second time, and Dr. Brinkley was on twice.

The Witness:—Twice.

Mr. Morriss Sr.:—We don't think it is a legal criterion, and we object to it because it is a matter that has been gone over and because it is not proper in any sur-rebuttal.

THE COURT:—Nobody is quicker than the Court to stop the testimony when they try to indulge in repetition, and you know that, and I have been doing it all week, but I think they have a right to ask the question, and I will overrule the objection.

Mr. Morriss Sr.:—We make the further objection to this testimony that it is incompetent, irrelevant and immaterial to any issue in this case, and it is collateral. If it were for the purpose of contradicting anybody—it is wholly a side issue and it is incompetent to establish any issue in this case.

THE COURT:—My understanding is, and I presume they do introduce it for the purpose of contradicting Dr. Brinkley's testimony, and if it wasn't for that purpose I wouldn't admit it.

Mr. Morriss Sr.:—It is on a collateral matter, and, further, it is hearsay.

THE COURT:—Go ahead.

Q.—Is there any accepted, recordable evidence, recorded evidence that the goat gland implanted in the testes has the same effect as the administration of the male sex hormone?

Mr. Morriss Sr.:—That calls for a conclusion "is there any recorded acceptable evidence," and it would call for the speculation and conclusion, and that is certainly improper, in addition to the other reasons.

Q.—To your knowledge?

THE COURT:—Overruled.

A.—I do not know of any article published anywhere in all of the medical literature that I have seen that shows there is the slightest resemblance between the action of the implanted goat gland and the administration of the male sex hormone.

Q.—Is there any evidence that any of the Steinach operations, either 1 or 2, as defined here, produces the same effect as the giving of the male sex hormone?

Mr. Morriss Sr.:—The same objection, may it please the Court, to all of that, and for the reason that it is not the best evidence.

THE COURT:—I don't know about that.

Mr. Reynolds:—I will confine it as to if he knows.

THE COURT:—I don't know whether the witness is qualified to testify as to what the Steinach operations are.

Q.—Dr. Fishbein, have you made any study of the literature on the production and the effect and the manufacture and the administration of sex hormones and sex hormone preparations? *A.*—I have.

Q.—Will you state what? *A.*—I am a member of the Council on Pharmacy and Chemistry, which regularly examines the constituents and studies claims of all gland products used in the practice of medicine, and it regularly publishes its report concerning the status of such glandular preparations in the practice of medicine; I have also made a study of the Steinach operations and have published a report on the various operations used for the purposes of rejuvenation.

Q.—All right, now, Doctor, I will ask you if in connection with your work you have found any acceptable evidence that any of the Steinach operations produce the same effect as giving the male sex hormone?

Mr. Morriss Sr.:—May it please the Court, to ask whether he has found, in the first place, calls for his opinion and conclusion about which he is not qualified to give, and in the second place, what he has found to be the best evidence, and, in the third place, he wants to know if it is acceptable to him and he is going to be the criterion; further, it calls for a conclusion and is incompetent.

THE COURT:—I think, possibly, your question is framed improperly, counsel, and I will sustain the objection to it in the form that it is in.

Q.—Dr. Fishbein, has there been any literature in connection with your work of that kind that has come to your attention advancing the theory that either of the Steinach operations produce the same effect as giving the male sex hormone?

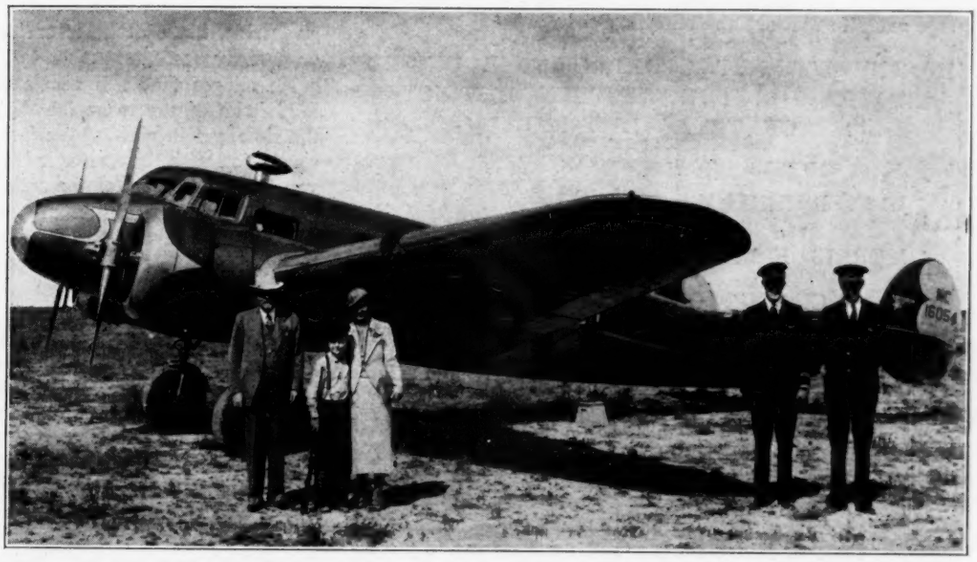
Mr. Morriss Sr.:—The literature would be the best evidence, and there is no accounting for the absence of the best evidence; that objection, in addition to all of the others.

THE COURT:—Overruled.

Mr. Morriss Sr.:—Note our exception.

A.—The published reports of the Council on Pharmacy and Chemistry and the published reports of the investigators who have from time to time performed operations similar to the Steinach operation are preponderantly—

Mr. Morriss Jr.:—The answer shows itself to be hearsay and to come through several different—



The Brinkley airplane, the family and the pilots.

THE COURT:—I don't think you listened to it, Doctor. The question wouldn't require the character of answer you are making.

Mr. Morriss Jr.:—We move that the answer be stricken and that the jury be instructed not to consider it.

THE COURT:—Yes, sir. The answer, so far as it has gone, will be stricken.

A.—No.

Q.—Have there been reports of investigation, so far as you know, directly to the contrary?

Mr. Morriss Sr.:—The same objection, may it please the Court, and the reports we think would be the best evidence, and it would be hearsay and a conclusion, and for all the reasons we have objected to it.

THE COURT:—What is your question?

Mr. Reynolds:—If for no other purpose—I think there are several others—but if for no other we pursued this line of testimony on the ground of the Doctor's good faith in making the statements about the plaintiff in this case.

THE COURT:—I know, but I don't think the Doctor or the plaintiff either one had any idea about the Steinach operation when they started out on this business. That is a matter that has come up here in your examination of Brinkley when you asked about those various doctors and he started talking about Dr. Steinach and other doctors elsewhere, and I think the form of your question now is improper in regard to that. I think that this witness having qualified as an expert you could ask him generally if he knows as a medical man whether the Steinach operation is commonly accepted by the physicians, and let him answer yes or no and explain it if he wants to and then get through with it in that way.

Mr. Reynolds:—Your honor has put the question better than I could.

Q.—Doctor, will you answer the question as put by the Judge? *A.*—I have written a report on various rejuvenation operations, of which the Steinach is one type. To explain myself, in that report I make the statement—

Mr. Morriss Sr.:—Just a minute.

THE COURT:—I wouldn't go into the report, just state what you know now.

A.—As a result of my studies of the results of the Steinach operation I find it doesn't have the effects of the administration of the male sex hormones.

Q.—What is the scientific name for the product generally used as the male sex hormone? *A.*—Testosterone propionate.

Q.—Is this made out of testicular properties or not?

Mr. Morriss Sr.:—We object to that.

THE COURT:—Overruled.

Mr. Morriss Sr.:—Note our exception.

A.—It is not.

Q.—Is it derived in anyway from goat gland tissue? *A.*—It is not.

Witness excused.

At this point the defense rested its case.

March 28

The plaintiff moved that the Court direct a verdict for John R. Brinkley, and the Court discussed with the attorneys the question of the nature of the charge to be given to the jury by the Court; next came the addresses to the jury by the representatives of the plaintiff and the defendant, after which the judge made to the jury the following charge:

IN THE DISTRICT COURT OF THE UNITED STATES FOR THE WESTERN DISTRICT OF TEXAS DEL RIO DIVISION

J. R. BRINKLEY
vs.
MORRIS FISHBEIN
} No. 202-Law.

CHARGE OF THE COURT

R. J. McMILLAN, Judge. Delivered March 29, 1939.

Now, gentlemen, I am going to give you the charge of the Court, and while in charging you it is going to be necessary for me to read from various books and papers which I have here on the bench, still the Court's charge will be oral and you will have no written charge to take into retirement with you. Accordingly, I ask you to give me good attention in order that you may remember the Court's charge as well as possible when you come to discuss the law and the facts in the privacy of the jury room.

At the outset, I want to give you some conception as to the function of a federal judge in charging the jury. Many of you may have served in cases on the state court dockets where the practice is very different from what it is here. There the judges are not allowed to comment upon the weight of the evidence or express any opinion with regard to it. Here, if the Court comments fairly and makes it clear to the jury that they are the triers of the facts, he is not only allowed to discuss the evidence with the jury but it is his duty to do so.

The Supreme Court of the United States in a famous case decided not so long ago said this about the matter:

"In a trial by jury in a federal court, the judge is not a mere moderator, but is the governor of the trial for the purpose of assuring its proper conduct and of determining questions of law. In charging the jury, the trial judge is not limited to instructions of an abstract sort. It is within his province, whenever he thinks it necessary, to assist the jury in arriving at a just conclusion by explaining and commenting upon the evidence, by drawing their attention to the parts of it which he thinks important; and he may express his opinion upon the facts, provided he makes it clear to the jury that all matters of fact are submitted to their determination. Sir Matthew Hale thus described the function of the trial judge at common law: 'Herein he is able, in matters of law emerging upon the evidence, to direct them; and also, in matters of fact to give them a great light and assistance by his weighing the evidence before them, and observing where the question and knot of the business lies, and by showing them his opinion even in matters of fact; which is a great advantage and light to laymen.' Under the Federal Constitution the essential prerogatives of the trial judge as they were secured by the rules of the common law are maintained in the federal courts.

"This privilege of the judge to comment on the facts has its inherent limitations. His discretion is not arbitrary and uncontrolled, but judicial, to be exercised in conformity with the standards governing the judicial office. In commenting upon testimony he may not assume the role of a witness. He may analyze and dissect the evidence, but he may not either distort it or add to it."

So you see the province of the Court here is not only to instruct you with regard to the law, but to assist you as far as he properly can with regard to the facts in the case. I make that statement to you for the reason that one of the counsel yesterday in arguing to you seemed to be under the impression that the Court had no function here except abstractedly to tell you what the law is. Such is not the case.

In this case the plaintiff sues the defendant for damages which he claims to have sustained by reason of the publication in a periodical of an allegedly libelous article, and he states not only that he has sustained actual damage by reason of humiliation, and injury to his reputation, both as a man and in his profession, but that he is entitled to what we call exemplary or punitive damages.

He alleges that this article was published in the February 1938 issue of the magazine *Hygeia*. While I dislike to take the time, yet in view of the instructions I am going to give in connection with the matter it is necessary for me to sketch with you briefly the part of the article charged on.

It is charged, substantially, under the heading of Modern Medical Charlatans that "in John R. Brinkley quackery reaches its apotheosis"; "He continues to demonstrate his astuteness in shaking shekels from the pockets of credulous Americans, notwithstanding the efforts of various governmental departments and agencies." It goes on to assert that upon the removal of his radio station he departed for Mexico and he is now broadcasting at Villa Acuna; that all sorts of efforts have been made, without success, to remove him from the air; that he reads the symptoms of patients and then by remote control prescribes the pill that they should use. You send him your dollar and you get your pill; that he has performed peculiar operations at the hospital, one of the main ones of which is the compound prostate operation for elderly gentlemen; that he has a high pressure man in his front office who makes sure that those who come to the hospital will have the money to pay in advance for the work and so forth. Most of the business seems to come through the mail, and it is time for the Post Office Department to do something with regard to the use of the United States mail by Dr. Brinkley in defrauding the public. Then it states the amount that he is supposed to have made out of his various quackeries; that he is the possessor of certain yachts, and travels abroad, and then it makes the allegation with regard to the fact that they do not mix and mingle with the passengers on the boats.

It is unnecessary for me to read the article to you verbatim because it has been read to you several times, and in sketching it to you I have said enough to recall to you the contents of the part which is declared on in plantiff's pleading. Those parts which are declared on do not constitute the entire article, but they are the only parts which the plaintiff alleges damaged him. And, accordingly, while you may consider the entire article as I shall say to you later for other purposes, you will only consider the elements of damages, if any, that may have flowed from that part of the article charged on in the pleading.

To this complaint the defendant responds by substantially two defenses. In the first place he says that the article is true; in the second he says that should the article chance in any particular to be in error or false, it relates to a matter of public concern and one with regard to which he was under the duty to write, and that it constitutes under all the facts and circumstances of the case a fair comment and criticism, and such being true it falls under the privilege accorded to articles of that kind by the statute.

So the issues are made up in that way, and they become comparatively simple, though the statment of the law with regard to them is not so simple.

The Texas statute with regard to libel provides in part and substantially in article 5430 of the Annotated Code that a libel is a defamation expressed in printing or writing tending to blacken the memory of the dead, or tending to injure the reputation of one who is alive, and thereby expose him to public hatred, contempt or ridicule, or financial injury, or to impeach the honesty, integrity, or virtue, or reputation of any one, and thereby expose such person to public hatred, ridicule, or financial injury.

Under this definition of libel it is of course obvious that this article falls under the heading of one which would be known as libelous per se, that is to say, that if the statments were made in that article they would upon their face be libelous and defamatory unless they were in some other way explained or justified.

Now, article 5431 of this same title of the Texas Statutes says that in any action for libel, in determining the extent and source of actual damage and in mitigation of exemplary or punitive damage, the defendant may give in evidence, if specially pleaded, all material facts and circumstances surrounding such claim of damage and the defense thereto, and also all facts and circumstances under which the libelous publication was made, and may also give in evidence, if specially pleaded in mitigation of exemplary or punitive damage, the intention with which the libelous publication was made. Then follows a statement of law to which I call your attention.: The truth of the statement, or statements, in such publication shall be a defense to such action.

The statute then goes on further to deal with the matter, and in article 5432 it treats of privileged matters. By privileged matters we mean things that are written or said upon occasions which are privileged. That is to say, upon an occasion for which the party cannot be held to account. To illustrate the matter for you I might give you a few examples: For instance, a congressman speaking in the halls of Congress at Washington cannot be held to account for what he says there. It is considered good public policy to allow him to talk without restraint, and he has the privilege. The occasion is privileged and he is not liable in damages for it. The same thing is true with regard to members of your legislature. To bring the matter more closely home to you, the same thing is true with regard to proceedings here in court. The judge of the court could not be held liable elsewhere for any remarks made in the trial of a case in court, nor could the attorneys be held liable for pleadings filed or remarks made in argument, nor could any member of the jury be held liable for anything that he might say in the jury room in the discussion of the case.

So far as the libel laws are concerned, that, gentlemen, is what we mean by privileged. The occasion is under certain circumstances supposed to be privileged, and the general effect of it is this, as I have just said to you, the proof of the truth of an article is a defense, whether the article is privileged or not, but if the article be one which is privileged then there is no liability whether it is true or not. The question of malice or lack of malice does not enter into it.

Accordingly, the Texas statute, which has recently been amended, says substantially and in part as follows: The publication of the following matters by any newspaper or periodical shall be deemed privileged and shall not be made the basis of any action of libel. Then after setting out several matters with which we are not concerned it says this: A fair and reasonable comment or criticism of matters of public concern, published for general information. So you will have observed that the truth of the article published constitutes a complete defense, or even though the article should not be true, if it constitutes a publication in a newspaper or periodical of a matter relating to something of public concern and published for general information and is a fair and reasonable comment or criticism with regard thereto, then it is privileged and the party publishing the article or writing it for publication cannot be held liable in damages for it.

The plaintiff in this case has chosen to base his suit on individual sentences and groups of sentences selected from different portions of the magazine article. In your consideration of the defense of truth made by defendant you should consider the publication as a whole insofar as the remaining portions of the magazine article cast light upon the meaning of the specific portions of the article made the basis of the plaintiff's suit. The sting of the language complained of, that is, the statement of the portion of the article which is the subject of this suit, is, in my opinion, the charge that the plaintiff is a quack and a charlatan, and the further charge that he is using the mails to defraud.

The words quack and charlatan have substantially the same meaning. Many definitions can be found in the dictionaries or in the reports of the courts. A common definition of the word quack is to make vain and loud pretensions, especially of medical ability; to boast, to vaunt aloud or be a boastful pretender to medical skill or to make extravagant claims for a cure-all; to advertise with fraudulent boasts. You are not limited, of course, to these definitions that may be found in a dictionary. In considering the matter, the words used in the article are to be construed in the way they would be construed and understood by the ordinary reader of the magazine, keeping in mind the general class of people who would read a magazine of the kind in which this article was published, and if you find that the sting or substance of the specific portions of the article complained of is substantially true, then you will return a verdict for the defendant.

As I have said to you, the defendant takes two grounds of defense. In the first place, that that which he has published is true, and in the second place the entire article and the portions of which the plaintiff complains of was written as and constitutes a fair and reasonable comment and criticism of matters of public concern, published for general information.

You will find that certain portions of the published matter of which plaintiff complains is substantially true; in fact, certain portions he has testified to on the stand and has admitted their truth, at least in substance. Now, if you find those portions which have not been admitted true, or which you do not find to be substantially true from the evidence, constitute a reasonable and fair comment or criticism with regard to matters of public concern when viewed in the light of the statements in the article which you find to be substantially true, your verdict should be for the defendant, even though you find such other matters of comment and criticism to be false.

In this connection I instruct you that in order to establish the defense of truth of the article it is not necessary for the defendant to show literatim and verbatim that every word in the article is literally true. If the substance of it be true, that is to say, if the part of it which is injurious be true, if it be substantially correct, then the defendant has made out a defense, despite the fact that there may be certain particulars in which the article would be in error. In other words, it is the sting of the article, the general purport of it, that is to be considered. For instance, to give you a homely illustration of the matter, suppose I should say that you had backed your truck up to my pasture and cut my fence and stolen twenty-seven sheep from me and carried them off. If on being sued in the matter I could only prove that you had stolen eighteen, what I had said wasn't literally true because I said you had stolen twenty-seven, while as a matter of fact you had only taken eighteen. But the libelous feature of the statement doesn't consist in the exact number of the sheep, it consists in the allegation of the theft of the sheep. If it was proved that eighteen were taken, that would constitute a defense to the action, despite the statement made was that twenty-seven were taken. In other words, if the substance of the article is established as substantially true, then should it be true that there are one or two misstatements which do not change the general tenor of the article, that doesn't affect the defense of truth, in the light of the law.

Now, the defendant contends that the matters dealt with in the article complained of were matters of public interest and of public concern, published for general information. It is

obvious, of course, that matters of public health are matters of public concern. We see that evidenced every day by the laws of the country, by the conversations of the people, by the articles which appear in magazines and newspapers. It is evidenced by the fact that the state has and exercises the power to license those parties who practice medicine, and it is an offense in most jurisdictions to practice medicine without a license. We constantly see people prosecuted for that. The state has and exercises the power to license pharmacists, people who compound prescriptions and dispense them to be used in the treatment of the sick. The same is true, collaterally, with regard to the practice of law. It is a matter that affects the public interest, and the state has prescribed certain standards for it and it is an offense to practice law without a license.

Accordingly, it occurs to me that as a matter of fact, and in discussing the facts with you, anything in a general way which affects the public health is a matter of public concern.

Now, it might be reasonably argued and might be true that an individual doctor who was pursuing his practice in the ordinary way in some town wouldn't be such a matter of public concern that any one would be justified in writing an article about him, but if a doctor extends his practice to cover the country, advertises his ability not only in writing but over the radio and attracts to the place where he practices his profession an unusually large number of people, that is to say, a number entirely disproportionate as far as one doctor would be ordinarily concerned, then his activities do become a matter of public concern, and should it happen that his practice is of such a character that the public health is affected one way or another thereby the parties would be entitled to write about it, and if the comments constituted a fair and impartial criticism there would be no liability. On the other hand, of course, the individual citizen has his rights. Among those rights is the one which entitles him to be protected against libel or slander, and if the comment or criticism is not impartial or is not fair, then despite the fact that it may be a matter of public concern there would be liability for it.

The defendant further contends that the plaintiff by his advertisements invited the people to submit to his system of treatment, and that if he, the defendant, really believed it to be of little or no value then he had the right to maintain that it was so and that even if in drawing inferences of bad intention he fell into error, yet if he wrote honestly and with the intention of exercising his vocation as a public writer fairly and with reasonable moderation, he is entitled to a verdict. Here is a man bringing forward what he professes to be new systems of treatment and inviting the public to consult and patronize him as the only effective means to cure certain ailments. In doing this he challenges public criticism, and if a public writer, using a reasonable degree of temper and moderation, as behooves any one that makes imputations upon others, thus discussing the subject in the exercise of his vocation, falls into error as to the facts or the inferences and goes beyond the limits of strict truth, he is nevertheless privileged. The occasion is a privileged one, and if the privilege is exercised honestly, faithfully and with reasonable regard to what truth and justice require, and if the comment or criticism is fair and reasonable, then though he may exceed the limits of what he can legally prove to be the truth he is protected from liability.

In connection with your consideration of the defense put forward by the defendant that the portions of the article complained of and taken together with the remainder of the article constitute reasonable and fair comment and criticism of matters of public concern, published for general information, you may consider the question as to whether or not the plaintiff's conduct is unprofessional in its nature. In determining what is professional and not professional conduct of the physician you may take into consideration the rules of ethics followed by the great majority of medical men and which are recognized generally in their profession. Most people know in a general way what you mean by ethics, but few of us think or speak in terms of definitions, and it is well sometimes to refresh our memory or knowledge by looking to definitions. Webster's Dictionary says with regard to ethics that it is "the science which treats of the nature and laws of the actions of intelligent beings, these actions being considered in relation to their moral qualities; the science which treats of the nature and grounds of moral obligation; the science of human duty" and secondly, "a particular system of principles and rules concerning the duty, whether true or false; rules of practice in respect to a single class of human actions; as social ethics; newspaper ethics," and so forth. And in speaking with regard to the word ethical he says it is "relating to morals; treating of morality; containing precepts of morality," and so forth. The term as applied to the liberal professions such as the practice of medicine or the practice of law is generally understood to mean that course of conduct pursued by recognized moral practitioners either of medicine or of law.

It doesn't necessarily follow that every slight deviation or change by a doctor or a lawyer from what the general body of the doctors or lawyers do would be unethical, but if his course of conduct was far beyond and contrary to the course of conduct which the other members of his profession followed, then you would say that he was unethical either in the practice of medicine or in the practice of law.

As the evidence here shows, it has practically always been considered unethical for physicians to advertise, that is to say, to advertise further than to call the attention of the public to the fact that they were there ready to practice, and by some character of card giving their location or address, or if they specialize in some particular kind of practice to so advise the public. Advertisements by which prizes are offered to secure patronage or by which claims are made of superior skill or ability are not ethical, and you may consider those matters in this case in passing on the question as to the truth or falsity of the charge. In other words, it is one of the component elements that go to make up the question as to whether this man would be classified as a quack or not. It is not entirely determinative, but it may be that it is entitled to consideration. Accordingly, in determining what is professional and unprofessional conduct by a physician you are entitled to take into consideration the rules of ethics followed by the great majority of the medical men and which are generally recognized in their profession. The conduct of the plaintiff Brinkley should not be measured against his own personal ideas with regard to what is proper. It should be measured against the ethics and approved conduct of physicians generally, and to such extent that his conduct as a physician varies from the rules of ethics recognized and observed generally he becomes subject to criticism, and criticism of his conduct is privileged unless unduly excessive and the terms of the criticism are unreasonable or unfair.

The defendant, as I have said, put forward as a defense to this article the contention that the article complained of is a fair comment and criticism of matters of public concern, published for general information. The defendant wrote the article in question as editor of a magazine of national circulation, published by a voluntary organization to which a large number of licensed physicians in the United States belong. You therefore have to consider the question as to whether or not the portions of the article complained of by the plaintiff, when taken in their context and in connection with the remainder of the magazine article, constitute a reasonable and fair comment and criticism of the plaintiff and his medical practices. In determining this matter you should bear in mind that if you find it is true that the plaintiff is taking large sums of money from the public through pretending to have medical skill and that he does not have such skill and is thus preying upon the ignorance of a large number of people, the defendant would be justified in using strong language in denouncing the plaintiff, and you should bear in mind that ridicule is often the strongest weapon in the hands of a public writer, and if it is used in a way to emphasize matters with respect to which strong and definite language would, in the very nature of the occasion, be used, then it does not in any way render the comment or criticism unreasonable or unfair.

In other words, if you should find that the nature of the matters to be discussed is such as to warrant criticism or condemnation, then the defendant is not required in writing to write a mere colorless article, stating simply and only matters of fact as a newspaper reporter might in describing a fight or fire or something of that variety. He is entitled to put in his article, if it is reasonably and properly done, what you would call punch. As the courts have held with regard to matters of this kind, ridicule or sarcasm are frequently effective, and if they are justified by the facts then there is no liability for their use.

Of course, you are the triers here of the facts, and it is for you to determine whether upon the facts as you have heard them here this article constitutes a fair and reasonable comment or criticism of Dr. Brinkley and his activities. If you are of the opinion that his activities are of such a character as to render them a matter of public concern and that his conduct is unethical and that his claims are unwarranted then you are entitled to consider the question as to whether the defendant in writing this article has expressed his comment and opinion in such terms as fairly to carry those facts home to the public generally. There is no use blinking the fact that this article was intended to have a wide circulation. It was intended to carry the defendant's viewpoint of Dr. Brinkley's operations to everybody that he could get it to. If his viewpoint is correct, then his purpose and his action are highly laudable. On the other hand, if his viewpoint was incorrect and he proceeded upon a false premise, then his purpose and object was not laudable and he is liable in damages.

The burden is upon the defendant, Dr. Morris Fishbein, to prove his defense, namely, the substantial truth of the charges sued on and the claim of privilege that the article sued on was not more than a fair and reasonable comment on a matter of public concern, by a preponderance of the evidence.

You are instructed that if you believe and find from the evidence that the statements of fact contained in the portion of the article sued on are not true, and if you further find and believe from the evidence that such statements were not justified as privileged communications as defined to you in the Court's charge, then in such event you must find and return a verdict for the plaintiff and you must assess such damages as you may find under the Court's charge as herein given you either actual or actual and exemplary. In this connection you are charged that damages are presumed by the law to flow from any libelous statement concerning another. And if it is libelous and not justified plaintiff is entitled to recover such actual damages as would ordinarily flow from or be occasioned by such libelous statement, including damages for humiliation, mental anguish and suffering and injury to his feelings and for injury to his reputation, both personally and professionally, whether there is proof of damages in such respects or not.

We have in law what are known as exemplary or punitive damages. They are damages which are not intended to cover any actual or special damages that have been sustained. They are not intended to put you back in the place that you were before you were injured but are intended by way of exemplification or punishment or by way of reprisal. They operate in effect as a sort of private fine, and those damages are only allowed in libel cases where actual damages are found to have been sustained and further where actual malice is shown to have existed. By malice we mean ill will, bad or evil motive or such gross indifference to the rights of others as will amount to wilful or wanton conduct. Malice cannot be inferred merely from the fact of the publication. As said in Texas Jurisprudence, "While the existence of actual or express malice is not presumed as a matter of law, and must be proved, it need not be proved by direct or extrinsic evidence; evidence of facts and circumstances from which it is reasonably inferable is sufficient to show its existence. It may be inferred from the relation of the parties, the circumstances attending the publication, the language used, and from the words or acts of the defendant before, at or after the time of the communication; but there must be evidence from which the jury can infer malice existing at the time of publication and actuating it. Malice is not implied or presumed from the mere fact of the publication, nor may it be inferred alone from the character or vehemence of the language used, nor found from the falsity of the statement alone."

Now, it is not possible to give you any exact yardstick by which you can measure damages, in a case of this kind, should you find the plaintiff is entitled to recover. The law allows recovery for certain damages of an intangible sort which you cannot press down into a corner and determine like you can certain other damages. If you should kill your horse you could prove the damages exactly by proving the market value of the horse, but if I should hurt your feelings nobody knows exactly what damages have been occasioned you by having your feelings hurt. Accordingly, when you come to consider the question of the damages that somebody suffers by reason of humiliation or by reason of injury to his reputation, either personally or professionally, that is a matter which has to be left to the good judgment and discretion of the jury. Of course, in dealing with injuries to professional reputation, if special damages were alleged and proved, that is, you showed that a man actually lost something specifically, it could be recovered, but there is no such proof here in this case.

When it comes to the question of the measure of damages that would be applied should you conclude to allow punitive or exemplary damages, that again is a matter which is not susceptible of ascertainment by any rule of thumb. They have to be damages in such an amount as you would consider a sufficient punishment for doing a wanton or malicious thing, and of such a character as to deter other people from doing the same thing.

In passing upon this question of damages, should you come to the matter of damages, should you conclude that there is any liability here upon the defendant, then you are entitled to take a great many things, as I view it, into consideration. This plaintiff here claims humiliation by reason of the publication of an article which accuses him of being a quack, and which states that he is getting large quantities of business through the mails and probably should be investigated for violation of the mail fraud statutes. In other words, he says that he has been humiliated, his feelings have been hurt, that he has been shamed and that he has been injured both in his reputation with his neighbors and in his reputation as a doctor. Accordingly, when he says that, he puts in issue not only his reputation, his feelings as they exist now, but he puts in issue practically the entire course of his professional life.

Now, I am discussing this matter with you not from the law standpoint but from the standpoint of the facts, which, as I read to you in the decision from the Supreme Court of the United States, it is my duty to do.

There is no doubting the fact that this plaintiff has been the subject matter of a great deal of trouble and controversy and difficulty in many places in this country and abroad. The question as to his ethics as a physician and his right to practice medicine has been up not only once or twice but several times. He has been tried in Kansas on the issue as to whether his conduct was of such a character that his right to practice there should be canceled, and the evidence shows it was canceled. There was a general cancellation of licenses in Connecticut, and his and a number of other eclectic doctors' licenses were canceled. There has been some character of cancellation or some character of proceedings against him in the state of California. His right to continue to broadcast over the station which he had in Kansas has been investigated and discontinued by the United States government. Some character of a degree that was conferred upon him or a certificate of some character, I am not clear exactly what it was, by some university in Italy has been canceled. It is manifest from his own evidence and the evidence here that this is not the first time that articles of this kind have been written about him. In fact, it is testified here that a suit between him and this same party, Dr. Fishbein, was maintained in Kansas some few years ago and depositions from that suit have been offered here in evidence. According to his own testimony he has been convicted of a violation of the law with regard to the sale of alcoholic spirits and was assessed a fine and some jail sentence, which jail sentence I believe he states he did not serve.

He has published a book, or rather he got some man, according to his evidence, to write a book about him called "The Life of a Man," and according to his evidence he has circulated this book and is circulating it. I don't believe he says he ever sold it, but it has been in general circulation and he says that he has given many copies of it away. Now, in this very book which he has written about himself and which he is circulating he quotes from the opinion of the Supreme Court of Kansas in sustaining the action of the board in canceling his license to practice medicine, in which it there says "The Supreme Court was hardly impartial in its denial of Brinkley's claim, since it went beyond the charges in purporting to express them; holding that they held that Brinkley was 'an empiric without moral sense, and having acted according to the ethical standards of an impostor, the licensee has performed an organized charlatanism until he is capable of preying on human weakness, ignorance and credulity to an extent quite beyond the invention of the human mountebank' . . . who was 'fleecing the defective, the ailing, the gullible and the chronic medicine takers who are moved by suggestion, and is scandalizing the medical profession and exposing it to contempt and ridicule.'"

This part of the book was offered here in evidence, and of course you are entitled to consider it.

Now, I do not comment upon that in order to applaud any court for writing anything of that kind. Nor is it called to your attention as tending to substantiate in any way any fact that is stated therein, but the thing that occurs to me about it is that if a man feels he is capable of humiliation by virtue of an article of the character sued on here, then why would he in a book of his own copy a thing like that said about him and give it currency? In other words, you have to consider, as one of the old English law lords said, the question as to what reputation a man has in passing upon the question as to the amount of damages that are sustained.

In Jones on the Law of Evidence this quotation occurs, "Lord Ellenborough long since tersely stated the doctrine which still prevails: 'Certainly a person of disparaged fame is not entitled to the same measure of damages with one whose character is unblemished, and it is competent to show that by the evidence.'"

Now, those are matters which are entitled to consideration in passing upon the question as to whether this article, if libelous, has occasioned damages. You can very readily see that if you take a person of a very retiring, shrinking, modest disposition and make some false, scandalous and ugly charge against him you might humiliate and hurt him terribly. On the other hand, if you take somebody who has been on the firing line all his life and had that kind of thing said about him time and time again, the saying of it another time might not hurt him any more than water rolling off a duck's back. It is frequent that men in public life who are constantly abused and libeled, because of their position, have become so accustomed to it that any humiliation or shame with regard to such matters has long since ceased to exist. It doesn't mean that if the article is libelous and untrue it is justified, but I am discussing it with you now purely and simply from the standpoint of the extent of the injury, if any. You are entitled to consider the background of the doctor. He has apparently made no secret of his background. In passing upon the question as to whether his reputation has been injured with other people you are entitled to consider the question as to whether these same things or things of this same character have been said before and general circulation given to them. It doesn't mean the party who says them again would not be liable for damages if they were libelous, but it does mean that you are entitled to consider those questions in passing upon the extent of the damages.

In cases in which articles are found to be libelous, but no actual damages result, nominal damages follow as a matter of law. Upon nominal damages punitory damages may be cumulated if, as I have told you before, it is found that the article is libelous and that malice, as I have defined that term to you, existed in connection with it.

Now, the defendant says another thing here which he is entitled to have called to your attention, and that is he believed these things he said in this article were true. To support that contention the Court allowed evidence here with regard to certain sources or avenues of information which he consulted or examined. Those things were not allowed to come in as tending to prove the truth of the facts set out either in those articles or in those reports but were allowed to come in evidence, as I told you at the time, for the purpose of determining the question of the defendant's good faith. That is to say, the law says that if I libel you by publishing something that is false, then I am liable to you for damages, but if at the time I published it I did it in good faith and I believed it to be true and I had reasonable grounds upon which to base my belief of the truth of the charge, then the jury can consider those facts by way of mitigation of damages, that is to say, by way of reduction of damages; and that I charge you is the law with regard to that phase of the matter.

Does that sufficiently cover your requested charge on that phase of it?

Mr. Morriss Jr.:—Yes, sir.

THE COURT:—You are, of course, the exclusive judges of the credibility of the witnesses, of the weight to be given to their testimony and of the facts proven. The law in the case you must receive in this charge from the Court and be governed thereby.

Insofar as I have discussed the evidence with you or made any comments with regard to it or expressed any opinions with regard to it, I did so for your assistance, and if my comments or expressions or opinions are in harmony with your views then you may accept them, otherwise you may reject them, for as to the facts you are the triers thereof, bound only by your conscience and by your oaths as jurors.

This case has been tried at some length and it has been thoroughly and conscientiously developed and argued by counsel for both sides, and it would be idle to say it isn't a case of some public interest because we all know it is. Whenever a man assumes the prominence that the plaintiff in the case has and a man has the prominence of the defendant in the case and they meet upon the legal battleground, naturally it attracts the attention of the public. There are many people who are interested one way or the other in the outcome of it. I don't think there is any monopoly of opinion on either side, but what I want to convey to you now is the same idea I have been attempting to convey to you all the time during the trial, that you are not interested or concerned here one way or the other with regard to what anybody on the outside thinks about this. It doesn't make any difference to you whether anybody is pro or con, either for the defendant or for the plaintiff. It is your business to courageously here consider this evidence and the law as the Court has given it to you and return a verdict which you think speaks the truth. I don't want you to consider or discuss anything that has not come out here in evidence. Let us have no chance of a mistrial of this case by virtue of any juror doing any independent testifying on his own account. You are entitled to apply to the solution of the question submitted to you your knowledge and experience of a lifetime, but one juror is not entitled to narrate to the other jurors some independent fact which he thinks or conceives that he knows about the matter that has not come out here in evidence, and if he has such a fact in his mind he must disregard it himself in passing upon the case.

I have had forms of verdict prepared for your convenience. In one form of verdict you will find for the plaintiff and there is a blank left in which you may insert, if you find damages. There is another blank left in which you can insert, if you find the plaintiff is entitled to it under the instructions I have given you, the amount of exemplary or punitive damages. There is another form in which you find for the defendant, Morris Fishbein. In either event your verdict must be signed by the foreman, and your verdict must be unanimous. I will let you select your own foreman.

CONCLUSION

At this point the jury withdrew from the room, while the attorneys presented their objections to the charge made by the Judge.

After about four hours the jury returned a verdict for the defendant, Dr. Morris Fishbein.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - Eight dollars per annum in advance

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SATURDAY, JUNE 3, 1939

HEARINGS ON THE WAGNER HEALTH BILL

On May 25 and 26 representatives of the American Medical Association appeared before the subcommittee of the Senate Committee on Education and Labor in the Senate Office Building in Washington to present the point of view of the House of Delegates of the American Medical Association relative to this proposed legislation (see Proceedings of the St. Louis session, this issue, page 2295). Preliminary to the hearings, a day was given over to consideration of the material to be presented and the manner of presentation. The first statement was made by Dr. Rock Sleyster, President of the Association. Dr. Edward H. Cary, Chairman of the Legislative Committee, presented the various speakers to the Senate Committee. Dr. Walter Donaldson offered the report adopted without a dissenting vote by the House of Delegates, after which the factual data of medical care were outlined by Dr. R. G. Leland, Director of the Bureau of Medical Economics. A general statement in opposition to the Wagner Health Bill on the basis of current conditions in American medical practice was next presented by Dr. Haven Emerson of Columbia University. Hospital service in the United States was discussed by Dr. R. L. Sensenich of South Bend, Ind., a member of the Board of Trustees, and by Dr. Wingate Johnston of Winston-Salem, N. C. Dr. Milton Robb of Detroit considered the relationship of public health education to the progress of medical care, and Dr. Robert L. Benson of Portland, Ore., outlined the method of care of the indigent in Oregon. A statement prepared by Dr. Walter Vest concerning compensation for loss of wages during illness and medical service in relationship thereto was given to the committee for its consideration.

At another session Dr. Charles Gordon Heyd of New York indicated the manner in which this legislation might serve as an introductory step to a complete compulsory sickness insurance system, and the closing consideration was made by the editor of THE JOURNAL. Participating in the discussions associated with this presentation were Drs. Olin West, Secretary and General Manager of the Association; W. C. Woodward, Director of the Bureau of Legal Medicine and Legislation; W. D. Cutter, Secretary of the Council on Medical Education and Hospitals; Frank Crockett of Lafayette, Ind., member of the Legislative Committee, and Holman Taylor of Fort Worth, Texas, Secretary of the Texas State Medical Association and member of the Judicial Council of the American Medical Association.

During the course of the hearings, many senators at various times listened to the statements that were being made, including Senator Murray (Vermont), Ellender (Louisiana), Taft and Donahey (Ohio), Thomas (Utah), Holman (Ore.) and Davis (Pennsylvania). Opportunity was also afforded for members of the delegation to confer with other senators relative to the objectives of this bill. Two medical members of the Congress—Drs. Smith of Ohio and Austin of Connecticut—expressed opposition to this legislation, and Austin made a personal appearance before the committee. Congressman Smith is scheduled for a later appearance. Also on the days devoted to the hearings of the representatives of the American Medical Association there appeared Mr. Homer Folks of the New York State Charities Aid Association, who approved the bill, and Dr. C. C. Lund, who appeared in opposition on behalf of the Massachusetts State Medical Society.

During the course of the hearings Senator Wagner of New York interrogated at considerable length all the physicians who appeared, apparently endeavoring to obtain suggestions as to amendments to the measure or other means by which it might be made suitable. Large numbers of persons were in attendance and the statements made were widely disseminated in the press and over the radio. It is expected in a future issue of THE JOURNAL to present a condensed account of the statements made and the questions and answers brought out by the discussion. At this time the indications appear to be that the Wagner Health Bill will not receive final consideration during the present session of Congress.

COLOSTRIC ANTIBODIES

The demonstration by Schneider and Szathmary[1] of Budapest of an abrupt rise in specific antibody titer of the blood serum of newborn calves following the first feeding of colostrum is confirmatory evidence in support of current belief as to the mechanism of postpartum transfer of maternal immunity. Veterinarians suggested long ago for the prevention of tuberculosis the immediate separation of newborn calves from their diseased mothers in infected herds, the young to be reared by healthy foster mothers or by artificial feeding. In spite of the most careful hygienic measures, however, almost all calves thus isolated developed gastrointestinal disease, joint disease or septicemia, fully 80 per cent of them dying within the first few days. Necropsies

1. Schneider, L., and Szathmary, J.: Ztschr. f. Immunitätsforsch. **94**: 458, 465 (Dec.) 1938.

showed that these deaths were not due to the ordinary contagious diseases but to invasion of the living tissues with the commoner environmental saprophytes. Evidently the calf at birth is unprepared to resist invasion by numerous species of micro-organisms which do not cause recognizable disturbance in adult cattle.

Later it was demonstrated that newborn calves will remain free from saprophytic infections if allowed one natural feeding before separation from the tuberculous mothers. In this first feeding the calves do not obtain the usual milk but a specially secreted premilk or colostrum. One colostric feeding is usually sufficient to immunize a newborn calf against the usual subpathogenic environmental flora. Fully 90 per cent of all calves thus immunized may be successfully raised by artificial feeding. Veterinarians concluded from this observation that there is present in the premilk or colostrum some highly efficient hormone, enzyme, bacteriophage or other protective substance, especially designed to counteract the organisms which invade at birth. The nature of this hypothetic colostric bacteriostat is unknown, although Theobald Smith [2] and his co-workers found that calves given one or more initial feedings with normal adult cow serum acquire the same degree of postpartum immunity.

Most of the later attempts to determine the nature of this lactic substance have been directed toward the isolation and identification of hypothetic "inhibins," "lysozymes" or "transformins" [3] in normal milk. The Hungarian veterinarians, however, adopted a new method of approach, studying the specific antibody titer of both colostrum and newborn calves. Several weeks before the expected delivery, pregnant cows were immunized against both typhoid bacilli and diphtheria toxin. By the end of this duplex immunization the cows had 170 antitoxin units per cubic centimeter in their blood stream and a 1 : 100 antityphoid agglutinin titer. Samples of colostrum withdrawn at this stage showed a 1 : 5,000 agglutinin titer and 1,400 antitoxin units per cubic centimeter, an average of from ten to fifty times the antibody titer of the maternal blood. Theoretically, therefore, 1 cc. of colostrum would be the equivalent of from 10 to 50 cc. of blood serum in the oral transfer of acquired maternal immunity.

Before the first natural feeding the newborn calves showed no trace of typhoid agglutinin in the blood stream and less than 0.02 unit of diphtheria antitoxin per cubic centimeter. This confirms the conclusions of numerous previous workers, who have postulated that transplacental interchange of serum proteins does not take place because of the primitive nature of the bovine placenta. The Hungarian veterinarians found that within ninety minutes after the first feeding of colostrum the average agglutinin titer of the newborn calves had risen to 1 : 1 and the antitoxin titer to 0.25 unit per cubic centimeter of blood serum. By the end of the first twenty-four hours of normal feeding the average serologic titers of the calves was 30 per cent of that of the maternal blood. By this time the colostrum had been replaced by normal milk, which did not contain detectable traces of specific agglutinin though still containing 2 per cent of the colostrum titer of diphtheria antitoxin. By the end of two weeks this antitoxin titer had fallen to 0.97 per cent of the average concentration of colostrum, which trace of diphtheria antitoxin continued to be secreted in the milk for at least forty-five days.

The Hungarian serologists conclude from their data that colostric immunity is not due to the implantation of some esoteric hormone in the gastrointestinal tract, as previously assumed, but to a simple transfer of ordinary humoral antibodies. The mechanisms by means of which these antibodies are mobilized, concentrated or locally synthesized in the colostrum have not yet been determined. The apparently quantitative absorption of these colostric proteins from the gastrointestinal tract of newborn calves also awaits explanation. Further studies of colostric titer and rate of gastrointestinal absorption are promised for other animal species, including rodents, which have the human type of placenta.

2. Smith, Theobald: J. Exper. Med. **51**: 473 (March) 1930. Smith, Theobald, and Little, R. B., ibid., p. 483.
3. Jones, F. S., and Simms, H. S.: J. Exper. Med. **51**: 327 (Feb.) 1930. Allmendinger, W.: Inaugural Address, Tübingen, 1936. Dold, H.; Wizemann, E., and Kleinen, C.: Ztschr. f. Hyg. u. Infektionskr. **119**: 525 (May 28) 1937.

MECHANISM OF THE INSULIN RESPONSE IN NONDIABETIC MALNOURISHED PATIENTS

Since Pitfield [1] reported in 1923 that infants suffering from inanition gained in weight and in general health following the injection of insulin, this treatment of malnutrition in nondiabetic patients has been widely used. Allen and his co-workers,[2] Blotner [3] and Ellman [4] observed the effect of insulin therapy in cases of pulmonary tuberculosis, generalized arthritis or unexplained malnutrition of adult patients. They reported improvement in appetite, in weight gained and in the general appearance of well being.

The mechanism by which insulin may bring about a better state of nutrition has not been generally understood. The theories which have been postulated include direct stimulation of the stomach or of the vagus nerves which produces hunger contractions, depression of the blood sugar level which results in increase in the hunger contractions, and improved absorption and utilization of food by increasing the amount of one or all of the

1. Pitfield, R. L.: Insulin in Infantile Inanition, New York M. J. **118**: 217 (Aug.) 1923.
2. Allen, F. M.: Insulin in the Treatment of Tuberculosis, J. A. M. A. **101**: 1797 (Dec. 2) 1933; Insulin and Tuberculosis: A Partial Review of the Literature, Am. Rev. Tuberc. **34**: 230 (Aug.) 1936. Allen, F. M.; Douglass, S. A.; Warren, E. L., and Pottinger, W. E.: Insulin in Treatment of Tuberculosis, Am. Rev. Tuberc. **34**: 257 (Aug.) 1936.
3. Blotner, Harry: Observations on Effect of Insulin in Thin Persons, J. A. M. A. **100**: 88 (Jan. 14) 1933; Change Produced in Fat Tissue by Use of Insulin in Malnutrition, ibid. **100**: 1235 (April 22) 1933; Late Results Following Use of Insulin in 100 Cases of Malnutrition, New England J. Med. **218**: 371 (March) 1938.
4. Ellman, Philip: Use of Insulin in Nondiabetic Malnutrition, Practitioner **138**: 613 (May) 1937.

digestive juices (this hypothesis assumes that the improved appetite which has been observed following insulin therapy is secondary to the improvement in food utilization and not an effect on the stomach per se). Freyberg [5] suggested that the improvement in appetite accompanying the administration of insulin was purely psychologic.

The theory most widely accepted conceives that the increase in gastric motility and in subjective hunger sensation is directly brought about by a lowered blood sugar level which follows the administration of insulin. In 1916 Carlson [6] reported that the blood sugar level was inversely related to hunger contractions. Later, inhibition of normal hunger contractions resulting from an elevation of the blood sugar level with the intravenous administration of dextrose was reported.[7] Similar inhibition of the main stomachs of animals with Heidenhain pouches when dextrose was administered intravenously has been shown.[8] Mulinos,[9] however, was unable to find any inhibition of hunger contractions from the intravenous administration of dextrose. Quigley and Hallaran [10] confirmed the observation that dextrose did produce an inhibition of hunger contractions but reported that this lag was of only one to two minutes' duration. Motility returned immediately, though the blood continued to show hyperglycemia. Hunger contractions, these observers noted, invariably increased when the blood sugar level dropped below normal.

Scott and his co-workers [11] have reported that, within the range of experimental error, no variations in the blood sugar level of human subjects were found either preceding, during or after normal hunger periods. While this observation would justify the conclusion that the level of the blood sugar bears no causal relation to the normal "hunger periods" of man, it does not refute the evidence of many investigators [12] that hunger contractions, as evidenced by an increased motility of the empty stomach, consistently follow the injection of insulin, either intravenously or subcutaneously. This hypermotility occurs in so short a time after the injection of the insulin that it is not reasonable to assume that the primary etiologic factor is decrease in the level of the blood sugar. Wilder and Schlutz [12] demonstrated that the hypermotility which followed subcutaneous administration was rapidly abolished by atropine in doses of 0.5 mg. given subcutaneously, although the blood sugar level remained lower than that found during the insulin hypermotility of the stomach. Quigley and Halloran also showed that the insulin action increasing the motility of the empty stomach is destroyed when the vagus nerves are sectioned.

These various studies may justify the conclusion that insulin has a direct effect on gastric motility through stimulation of the vagus nerves. However, the lowering of the blood sugar level following the administration of from 12 to 20 units of insulin, as reported by Quigley,[13] may be an additional factor in increasing or prolonging gastric motility and subjective hunger sensation.

The improvement in nutrition of patients suffering from chronic debilitating diseases following the administration of insulin may nevertheless be brought about by a more complicated process than merely an increase in appetite. Okada and his colleagues [14] have demonstrated that decrease in blood sugar below the normal level does produce an increase in the amount of gastric, biliary and pancreatic secretion. Lueders and Watson [15] have reported a measurable increase in the potency of the pancreatic enzymes following the administration of insulin. They have further demonstrated a reduction of the digestive secretions and a diminution of gastric motility when dextrose is placed in the duodenum or administered intravenously. Lueders has also found evidence of improved digestion from examination of the stools of patients before and during insulin treatment.

There would seem then to be sufficient factual evidence to justify the conclusion that the mechanism of improved nutrition from insulin therapy includes direct stimulation, by way of the vagus nerve, producing increased motility and more acute subjective sensations of hunger and depression of the blood sugar below the normal level, causing additional or prolonged hunger contractions. These two factors may then be responsible for the immediate increase in appetite and willingness to partake of food which is usually manifested within fifteen to twenty minutes after the subcutaneous injection of the insulin. A third factor in the mechanism of the insulin response may be the increase in the amount of the digestive secretions, resulting in better digestion, absorption and utilization of the components in the patient's diet.

5. Freyberg, R. H.: Study of Value of Insulin in Undernutrition, Am. J. M. Sc. **190:** 28 (July) 1935.

6. Carlson, A. J.: The Control of Hunger in Health and Disease, Chicago University Press, 1916.

7. Bulatao, E., and Carlson, A. J.: Contributions to Physiology of Stomach Influence of Experimental Changes in Blood Sugar Level on Gastric Hunger Contractions, Am. J. Physiol. **69:** 107 (June) 1924.

8. Templeton, R. D., and Quigley, J. P.: Action of Insulin on Motility of Gastrointestinal Tract: Action on Heidenhain Pouch, Am. J. Physiol. **91:** 467 (Jan.) 1930.

9. Mulinos, M. G.: Gastric Hunger Mechanism: Influence of Experimental Alterations in Blood Sugar Concentration on Gastric Hunger Contractions, Am. J. Physiol. **104:** 371 (May) 1933.

10. Quigley, J. P., and Hallaran, W. R.: Independence of Spontaneous Gastrointestinal Motility and Blood Sugar Levels, Am. J. Physiol. **100:** 102 (March) 1932.

11. Scott, W. E.; Scott, C. C., and Luckhardt, A. B.: Observations on the Blood Sugar Level Before, During and After Hunger Periods in Humans, Am. J. Physiol. **123:** 243 (July) 1938.

12. Regan, J. F.: Action of Insulin on Motility of Empty Stomach, Am. J. Physiol. **104:** 90 (April) 1933. Wilder, R. L., and Schlutz, F. W.: Action of Atropine and Adrenalin on Gastric Tonus and Hypermotility Induced by Insulin Hypoglycemia, Am. J. Physiol. **96:** 54 (Jan.) 1931. Simici, D.; Guirea, G., and Dimitriu, C.: L'action de l'insuline sur la motilité et l'evacuation de l'estomac a l'état normal et pathologique, Arch. d. mal. de l'app. dig. **17:** 17 (Jan.) 1927. Quigley, J. P.; Johnson, V., and Solomon, E. I.: Action of Insulin on Motility of Gastrointestinal Tract: Action on Stomach of Normal Fasting Man, Am. J. Physiol. **90:** 89 (Sept.) 1929.

13. Quigley, J. P.: Action of Insulin on the Gastric Motility of Man, Proc. Soc. Exper. Biol. & Med. **26:** 769 (June) 1929.

14. Okada, Seizaburo; Kuramochi, Kwanichi; Tsukahara, Toshio, and Ooinoue, Tatsuo: Pancreatic Function: Humoroneural Regulation of Gastric Pancreatic and Biliary Secretions, Arch. Int. Med. **43:** 446 (April) 1929; Pancreatic Function: Secretory Mechanism of Digestive Juices, ibid. **45:** 783 (May) 1930.

15. Lueders, C. W., and Watson, M. E.: The Effect of Insulin Therapy on Pancreatic Enzymes in Malnutrition, Arch. Int. Med. **49:** 330 (Feb.) 1932.

Current Comment

FRACTURE OF THE SPINE DURING METRAZOL THERAPY FOR DEMENTIA PRAECOX

In this week's issue of THE JOURNAL (page 2240) appears another contribution concerned with fracture of the spine complicating metrazol therapy. Incidentally, the paper by Bennett and Fitzpatrick was received previously to the article by Polatin and his co-workers, which was published in THE JOURNAL April 29. Obviously convulsive therapy represents a difficult technic. It is susceptible to serious complications and is therefore one that should never be undertaken except under the best of controlled conditions. The report by Bennett and Fitzpatrick, first presented at a meeting of the Boston Society of Psychiatry and Neurology on February 16, indicates that eight out of seventeen patients treated by this technic complained of backache and that each of these patients showed x-ray evidence of compressed fractures affecting the spine. In this connection, the technic for preventing this complication described by Hamsa and Bennett in this issue (page 2244) merits attention. Apparently spinal anesthesia induced prior to shock therapy may be able to prevent severe fractures of the spine and lower extremities.

BROMO-SELTZER

Under the dangerous drug section of the new Federal Food, Drug and Cosmetic Act, the Food and Drug Administration has initiated action against Bromo-Seltzer. This prompt action against a large manufacturer indicates a desire to enforce the laws equally on all violators. Bromo-Seltzer, which is an acetanilid-bromide preparation, is alleged by the government to be misbranded "in that it is dangerous to health and because of the failure of the labeling to reveal facts material with respect to the consequences which may result from the use of the article and the failure to bear warnings against use in those pathological conditions, or by children where its use may be dangerous to health, or against unsafe dosage, or methods, or duration of administration, in such manner and form as are necessary for the protection of users." The allegations are based on provisions that went into effect last June. Similar provisions against dangerous drugs were not contained in the Food and Drugs Act of 1906 as amended. The Emerson Drug Company has indicated that it will contest the action of the Food and Drug Administration. In its answer to the charges, the concern denies that Bromo-Seltzer is dangerous. It states that it has been used for many years by millions of people without injurious results. The lack of scientific basis for these statements is evident to those who consult the scientific medical literature. Since 1906 THE JOURNAL has carried repeated references to injury from Bromo-Seltzer. The manufacturers have lately conducted a vigorous advertising campaign in what seems to be a wofully inadequate attempt to "build up" acetanilid without pointing out dangers that arise from its indiscriminate use. To provide a front of scientific plausibility, this exploitation utilizes a number of scientific studies which seem to have little or no bearing on the fundamental objections to Bromo-Seltzer. Presumably the large resources of the Emerson Drug Company will be made available in the contest of this issue. No doubt the Food and Drug Administration will present the scientific justification for the allegations in the stipulation. The case will be a test of what may be anticipated in the way of public protection from the new drug act.

THE PROCEEDINGS OF THE BRINKLEY TRIAL

In this issue of THE JOURNAL appears the final instalment of the proceedings of the case of *Brinkley* v. *Fishbein*, in which the verdict was awarded by the jury to the editor of *Hygeia*. Most significant is the charge of Judge R. J. McMillan to the jury which rendered the verdict in this case. The entire charge merits most careful consideration; indeed, some of the statements might well be read to the senior class of every medical college in this country. Particularly to be considered is that section of the charge dealing with medical ethics. Here the judge said, and it is repeated for emphasis:

> In determining what is professional and not professional conduct of the physician, you may take into consideration the rules of ethics followed by the great majority of medical men and which are recognized generally in their profession. . . . The term as applied to the liberal professions, such as the practice of medicine or the practice of law, is generally understood to mean that course of conduct pursued by recognized moral practitioners either of medicine or law.
>
> It doesn't necessarily follow that every slight deviation or change by a doctor or a lawyer from what the general body of the doctors or lawyers do would be unethical, but if his course of conduct was far beyond and contrary to the course of conduct which the other members of his profession followed, then you would say that he was unethical either in the practice of medicine or in the practice of law.
>
> As the evidence here shows, it has practically always been considered unethical for physicians to advertise, that is to say, to advertise further than to call the attention of the public to the fact that they were there ready to practice, and by some character of card giving their location or address, or if they specialize in some particular kind of practice to so advise the public. Advertisements by which prizes are offered to secure patronage or by which claims are made of superior skill or ability are not ethical, and you may consider those matters in this case in passing on the question as to the truth or falsity of the charge. In other words, it is one of the component elements that go to make up the question as to whether this man would be classified as a quack or not. It is not entirely determinative, but it may be that it is entitled to consideration. Accordingly, in determining what is professional and unprofessional conduct by a physician you are entitled to take into consideration the rules of ethics followed by the great majority of the medical men and which are generally recognized in their profession. The conduct of the plaintiff Brinkley should not be measured against his own personal ideas with regard to what is proper. It should be measured against the ethics and approved conduct of physicians generally, and to such extent that his conduct as a physician varies from the rules of ethics recognized and observed generally he becomes subject to criticism, and criticism of his conduct is privileged unless unduly excessive and the terms of the criticism are unreasonable or unfair.

Thus a Federal Court has recognized the significance of medical ethics for the protection of the public, and the jury after due consideration placed its approval on the right of the public to have the protection that medical ethics affords.

ORGANIZATION SECTION

PROCEEDINGS OF THE ST. LOUIS SESSION

MINUTES OF THE NINETIETH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD AT ST. LOUIS, MAY 15-19, 1939

(Concluded from page 2178)

HOUSE OF DELEGATES

Third Meeting—Wednesday Afternoon, May 17

The House of Delegates was called to order at 1:50 p. m. by the Speaker, Dr. H. H. Shoulders.

Presentation of Minutes

It was moved by Dr. Arthur T. McCormack, Kentucky, seconded by Dr. J. Newton Hunsberger, Pennsylvania, and carried, that the House dispense with the reading of the minutes.

Report of Reference Committee on Legislation and Public Relations

Dr. Holman Taylor, Chairman, presented a report of the Reference Committee on Legislation and Public Relations, which, as amended, reads as follows:

The report of the Committee on Legislative Activities covers in an informative manner two principal items of concern to the medical profession, namely the Veterans' Administration and medical relief through the Farm Security Administration. Your reference committee has considered these matters and wishes to report as follows:

1. Veterans' Administration: It is clear from the history and the statistics cited in the report that the purpose of the Veterans' Administration is primarily that of providing adequate accommodations for veterans entitled to medical and hospital service. It is anticipated that the peak of requirement of medical service will be reached in 1949 or 1950. A steady increase in available hospital beds will be incurred until that time. The profession is now in no position to object to the present rate of increase. We are advised that the Veterans' Administration has heretofore given due consideration to the counsel of our liaison groups, of whatsoever makeup, and that there has been no particular embarrassment between them. It is our information that the present contention of those in authority at Washington is that after the peak of demand has passed the surplus hospital beds shall be used for the domiciliary care of veterans not able to provide for themselves. It is the opinion of your committee at this time that this would be the proper use to make of these facilities. Your committee, however, would call the attention of this House of Delegates to the ease of conversion of veterans' hospitals into hospitals for the care of the public in general under some plan of socialized medicine. There seems to be no recommendation that can be advantageously made in this connection at this time.

2. Medical Relief Through Farm Security Administration: The report is very clear and specific in dealing with this problem. It occurs to your reference committee that the main requirement in this matter is a better understanding with the Farm Security Administration and a very definite coordination of effort between county and state medical associations, under the advice and counsel of the Bureau of Medical Economics of the American Medical Association. At the present time the practice of the Farm Security Administration is to make an agreement for medical service either with county medical societies or with state medical associations, as convenience may dictate. Your committee is advised, however, that the Farm Security Administration would prefer dealing with state medical associations primarily and with county medical societies secondarily. Your reference committee recommends that all agreements for medical service under the Farm Security Administration should be made with county medical societies under master agreements with the state medical associations, and that in such agreements the metes and bounds from the angle of medical ethics and medical economics should be set up. In order that there may be coordination of effort and uniform observance of the economic and ethical factors involved, it is further recommended that county medical societies send two copies of their respective agreements to their respective state medical associations, one of which should be forwarded to the Bureau of Medical Economics of the American Medical Association. The Trustees are requested to provide through the Bureau of Medical Economics for such statistical and other information as may be of service to state medical associations and county medical societies. The procedure recommended here should be looked on as an opportunity rather than a requirement.

There are many reasons why some effort should be made to direct developments in the matter of medical service for Farm Security Administration clients and similar groups. The procedures involved furnish an admirable setup for very objectionable practices in the direction of socialized medicine, so called. Under the agreements involved in the system, no practice should be allowed which is objectionable from the angle of socialized medicine. These practices have all been definitely and clearly set out in various pronouncements of the House of Delegates of the American Medical Association. Certainly, there should be freedom of choice of physician, and certainly there should be no intervention of a third party, between the patient and his physician; neither should there be any direction by any agent of the government as to the nature of treatment to be accorded the patient by his physician. It will be appreciated that in the present state of the changing order there will likely be changes in economic and ethical factors involved, which will accentuate all the greater necessity for close supervision of such matters.

Your reference committee heartily commends the announced attitude of the American Farm Bureau Federation, as preservative of the practice of medicine as we know it and as we believe our people want it.

Respectfully submitted.

HOLMAN TAYLOR, Chairman.
L. G. CHRISTIAN.
K. S. J. HOHLEN.
THOMAS P. FARMER.
G. HENRY MUNDT.

The report of the reference committee was adopted as amended on motion of Dr. Taylor, duly seconded and carried.

Report of the Reference Committee on Reports of Officers

Dr. William H. Myers, Georgia, presented the following supplementary report:

Teaching in Schools of Chiropody or Podiatry: Your reference committee approves the position taken by the Judicial Council in its supplementary report with regard to teaching the subjects of chiropody or podiatry.

Respectfully submitted.

FLOYD S. WINSLOW, Chairman.
WILLIAM H. MYERS.
JAMES Q. GRAVES.
ELBRIDGE J. BEST.
FORREST J. PINKERTON.

Dr. Myers moved that the report be adopted and the motion was seconded by Dr. Arthur J. Bedell, Section on Ophthalmology.

After discussion, it was moved that the report of the reference committee be laid on the table. The motion was seconded by Dr. Felix J. Underwood, Mississippi, and carried.

Report of Reference Committee on Reports of Board of Trustees and Secretary

Dr. John H. Fitzgibbon, Chairman, presented the following report:

In order to consider adequately the correspondence with the National Medical Association, Inc., referred to this committee by the House of Delegates on May 15, your reference committee arranged a conference with official representatives of that association, namely Drs. Carl G. Roberts, Roscoe C. Giles and Clarence H. Payne.

These representatives have brought to your committee's attention certain problems which it is mutually agreed must be considered as inimical to the welfare of colored physicians and the people whose medical welfare they have at heart. Among these problems are:

1. The erroneous impression created by publicity bearing on the question of membership in the American Medical Association.

2. Certain discriminatory attitudes said to exist which deny to competent members of the colored profession participation in governmentally directed health projects involving medical service to the patients of colored physicians.

With respect to the matter of membership in the American Medical Association, your committee desires to reemphasize the fact that membership in the various component county societies should not be denied to any person solely on the basis of race, color or creed. Attention is called to the fact that there are now a large number of colored physicians in the membership of the American Medical Association whose qualifications meet the professional requirements.

Notwithstanding the broad principle referred to, it is recognized that every component county medical society has the right of self government in local matters and membership.

Your reference committee desires to speak with emphasis regarding discrimination against any competent and qualified physician, regardless of race, color or creed, which interferes with his right as a physician to serve those who desire to consult him. This House of Delegates has consistently gone on record as insisting on the right of the citizen to choose his own physician and your reference committee feels that no discrimination should be tolerated.

Respectfully submitted.

JOHN H. FITZGIBBON, Chairman.
J. NEWTON HUNSBERGER.
GRANT C. MADILL.
CHARLES W. ROBERTS.
W. F. BRAASCH.

Dr. Fitzgibbon moved that the report of the reference committee be adopted, and the motion was second by Dr. Charles W. Roberts, Georgia.

After discussion, it was moved by Dr. John M. Birnie, Massachusetts, seconded by Dr. James E. Paullin, Section on Practice of Medicine, that the report of the reference committee be rereferred to the Board of Trustees for clarification and resubmission to the House at this session.

Report of Reference Committee on Miscellaneous Business

Dr. Henry C. Macatee, Chairman, presented the following report, which was adopted on motion of Dr. Macatee seconded by Dr. A. T. McCormack, Kentucky, and carried.

Your reference committee recommends that the resolutions dealing with the Army Medical Museum and Library submitted by Dr. H. C. Macatee, District of Columbia, be amended by substituting the words "the House of Delegates of the American Medical Association" for the words "the Medical Society of the District of Columbia," and by omitting the last paragraph.

Your reference committee recommends the adoption of the resolution in accordance with its suggested amendments.

Respectfully submitted.

HENRY C. MACATEE, Chairman.

Report of Reference Committee on Amendments to Constitution and By-Laws

Dr. Charles E. Mongan, Chairman, presented the following report:

1. Resolutions Proposing Amendments to the By-Laws Governing the Council on Medical Education and Hospitals: Your reference committee has given these resolutions a great deal of consideration. On Tuesday, May 16, 1939, a hearing was held, which was attended by the President, the President-Elect, the Secretary and many Fellows of the American Medical Association. At this well attended meeting the matter was fully presented and the importance of the Council on Medical Education and Hospitals was fully demonstrated. Its work seems to be well in hand and admirably executed. All phases of the question that had been presented at the hearing of the committee were gone over in executive session. The evidence for the proposed change in the By-Laws of this organization was well weighed.

Your reference committee has come to the conclusion that the Council on Medical Education and Hospitals, as provided for in the By-Laws, is working most auspiciously for the welfare of the American Medical Association, for medical education and for security of the public.

Your reference committee does not, therefore, recommend the amending of the By-Laws by the adoption of the proposed resolutions.

2. Resolution on Prescribing of Radium: After careful consideration of the subject matter of the resolution and the action of the House of Delegates of the American Medical Association in 1938 at which the recommendation of the Judicial Council was approved, your reference committee believes that a careful reading of the report of the Judicial Council, which was to the effect that a physician prescribing for a patient without examining the said patient is performing an unethical act, will show that there was nothing expressed in the opinion of the Judicial Council regarding the owning or leasing of radium other than the relationship of the lessor to the user of the radium.

Your reference committee would invite the careful attention of each member of the House of Delegates to the exact wording of the resolution adopted by the House of Delegates in the 1938 session.

Your reference committee reiterates the language of the report of the Reference Committee on Amendments to the Constitution and By-Laws in 1938, which read as follows: "After due consideration of the matter, your committee feels that the phraseology should remain. Any exceptions to the general principle involved would defeat its purpose."

Your reference committee recommends, therefore, that the resolution presented by the Illinois State Medical Society be not adopted.

Respectfully submitted.

CHARLES E. MONGAN, Chairman.
EDGAR A. HINES.
T. K. GRUBER.
FELIX P. MILLER.
E. G. WOOD.

Dr. Mongan moved the adoption of Section 1 of the report of the reference committee, recommending that the By-Laws be not amended in accordance with the resolutions. The motion was seconded by Dr. H. B. Everett, Tennessee, and lost after discussion.

On motion of Dr. A. T. McCormack, Kentucky, seconded by Dr. Arthur J. Bedell, Section on Ophthalmology, and

carried, the first section of the report of the reference committee was rereferred to that committee for further consideration and subsequent report.

The second section of the report of the reference committee, dealing with the resolution on the prescribing of radium, was adopted on motion of Dr. Mongan, seconded by Dr. Harvey F. Garrison, Mississippi, and carried.

Proposed Amendment to the Constitution

Dr. George Edward Follansbee, Chairman, Judicial Council, presented the following proposed amendment to the Constitution, which must lay over until the 1940 session for action:

Resolved, That the Constitution of the Association be amended by the insertion of the words "holding the title Doctor of Medicine or Bachelor of Medicine" between the words "associations" and "are" in article 8, section 1, third line.

Executive Session—Wednesday Afternoon, May 17

A motion to permit county and state officers vouched for by the delegates from the respective states and representatives of certain organizations interested, as well as the administrative personnel of the American Medical Association, to attend the Executive Session was duly seconded and carried.

The Sergeants-at-Arms polled the House, after which the House went into Executive Session at 3:30 p. m., with Dr. H. H. Shoulders, Speaker, presiding.

Report of Reference Committee on Consideration of the Wagner National Health Bill

Dr. Walter F. Donaldson, Chairman, presented the following report, which was adopted without a dissenting vote, on motion of Dr. Donaldson, seconded by Dr. H. B. Everett, Tennessee, and carried:

Your reference committee has carefully considered the bill designated as S. 1620, "A Bill to provide for the general welfare by enabling the several states to make more adequate provision for public health, prevention and control of disease, maternal and child health services, construction and maintenance of needed hospitals and health centers, care of the sick, disability insurance and training of personnel; to amend the Social Security Act; and for other purposes."

History of Wagner Health Bill

This bill was introduced by Senator Robert F. Wagner of New York, Feb. 28, 1939, and is commonly referred to as the Wagner Health Bill. The bill itself provides that, if it is enacted, it may be cited as the "National Health Act of 1939." The purposes of the bill are sufficiently stated in the title, but the bill itself must be recognized as a proposed amendment to the Social Security Act of 1935. The bill is intended to make effective a national health program recommended by the Interdepartmental Committee to Coordinate Health and Welfare activities.

The House of Delegates of the American Medical Association, at its special session in Chicago, Sept. 16 and 17, 1938, adopted five recommendations made by a special committee that had been appointed to consider and report on the National Health Program. It is important that this fact be borne in mind, for the bill now under consideration, which was drafted long after those recommendations were adopted and at a time when they were presumably known to the proponents of this bill, does not recognize either the spirit or the text of those recommendations. Any criticism of this bill by the Association is not to be construed, therefore, as a repudiation of any of the principles adopted at the 1938 special session of the House of Delegates.

Analysis of the Bill

S. 1620 proposes to amend title V of the Social Security Act —Grants to States for Maternal and Child Welfare—and title VI—Public Health Work and Investigations—and proposes to add to the Social Security Act certain new titles: namely, title XII—Grants to States for Hospital and Health Centers; title XIII—Grants to States for Medical Care, and title XIV—Grants to States for Temporary Disability Compensation.

Already some individuals and organized groups in the United States have appeared before the Senate subcommittee which has this bill under consideration and have urged its immediate enactment. Although the stated objectives of the Wagner Health Bill are generally recognized as desirable, your committee cannot approve the methods by which these objectives are to be attained.

Repeatedly, physicians and all other qualified professional groups have recommended the coordination and consolidation of the health activities of the federal government. The Wagner Health Bill leaves existing and proposed preventive and curative medical services widely scattered through several federal agencies.

This bill does not in any way safeguard the continued existence of the private practitioners who have always brought to the people the benefits of scientific research and treatment.

It does not provide for the use of the thousands of vacant beds now available in hundreds of church and community general hospitals.

The Wagner Health Bill proposes an extensive program in the field of "health, diagnostic and treatment centers, institutions and related facilities," without defining their functions.

This bill proposes to make federal aid for medical care the rule rather than the exception, since it does not specifically limit its benefits to persons unable to pay for adequate medical care.

The Wagner Health Bill does not recognize the need for suitable food, sanitary housing and the improvement of other environmental conditions necessary to the continuous prevention of disease and promotion of health.

This bill insidiously promotes the development of a complete system of tax supported governmental medical care, thus undermining and debasing present standards of medical services.

The House of Delegates in September 1938 urged compensation for the loss of wages during sickness. The Wagner Health Bill deviates from this suggestion by proposing to provide medical services in addition to compensation.

The Wagner Health Bill would authorize an enormous expansion of governmental medical services and therewith ultimately unlimited appropriations for its health program. The funds necessary would be so great as to increase still further the present burdensome general taxation.

The Wagner Health Bill provides for supreme federal control. Rules and regulations must be promulgated by the Chief of the Children's Bureau in the Department of Labor, the Surgeon General of the Public Health Service, the Federal Emergency Administrator of Public Works, and the Social Security Board. These federal agents are given authority to disapprove plans proposed by the individual states.

The House of Delegates at its September 1938 session approved the expansion of preventive and other medical services when the need could be shown. The Wagner Health Bill prescribes no method for determining the nature and extent of the needs for which it proposes allotments of funds.

The provisions in the Wagner Health Bill that have never been considered by the House of Delegates are the authorization of appropriations for studies, investigations and demonstrations, and the creation of federal and state advisory councils.

Conclusions

The Wagner Health Bill, as judged by the considerations that have been here presented, is inconsistent with the fundamental principles of medical care established by years of scientific professional medical experience, and in the opinion of your committee it is therefore contrary to the best interests of the American people.

For years the health of the people of the United States, as measured by sickness and death rates, has been better than that of most foreign countries, and this improvement has been continuous. The fortunate health conditions in the United States

cannot be dissociated from the standards and methods of medical practice that have prevailed under the present system of medical practice.

No other profession and no other organization have done more for the prevention of disease, the promotion of health and the care of the sick than have the medical profession and the American Medical Association. No other groups have shown more genuine sympathetic interest in human welfare.

The contribution of the individual members of the American Medical Association to medical care is universally regarded as monumental in total volume. The contribution of the American Medical Association, through a program of medical education and the activities of its numerous councils which safeguard medical service, gives abundant proof of interest in the problems of the national health. It has given continued consideration to these problems, whereas others show concern with these proposals because of a present but, it is to be hoped, a temporary need for relief. These are the groups which request revolutionary legislative action as indispensable for the extension and further diffusion of health facilities.

In view of its record and in consideration of the responsibility which American social history and the nature of medical care have imposed on the medical profession, the American Medical Association would fail in its public trust if it neglected to express itself unmistakably and emphatically regarding any threat to the nation's health and well-being.

The American Medical Association must therefore, speaking with professional competence, oppose the Wagner Health Bill.

RECOMMENDATIONS

Nevertheless, recognizing the soundness of the principles stated in the recommendations adopted by the House of Delegates at its special session in 1938, namely the expansion of preventive medicine and public health where need can be shown, the extension of medical care for the indigent and the medically indigent where the need can be demonstrated, with local determination of needs and local control of measures to supply these needs, your committee would urge the development of a mechanism for meeting these needs within the philosophy of the American form of government and without damage to the quality of medical services.

This question, as it relates to the aid to be given by an individual state to its own counties, municipalities or other local political units, is not immediately before this Association. The answer is to be found in the individual state constitutions and state statutes. Counties, townships and municipalities are creatures of the individual states and can be molded and guided by the state for its own purposes. The individual state, itself, is not a creature of the federal government. The federal government is, as a matter of fact, a creature of the individual states.

The fundamental question is how and when a state should be given financial aid by the federal government out of the resources of the states as a whole, pooled in the federal treasury. Disasters such as floods, dust storms, fire and epidemics have long been recognized as justifying such federal aid. No state or person has ever been heard to object to the use of funds out of the federal treasury for such purposes. No one has ever proposed however that, because federal aid is extended under such conditions to a state in distress, a corresponding aid must be extended to every other state regardless of its need. Nor has any one ever been heard to say that federal aid to a state in distress, because of flood, dust storm, fire or epidemic, shall not be extended unless and until the suffering state has produced from its own treasury a stated amount of money to aid in affording the relief. The development of such bizarre thinking may be traced to those who have originated within comparatively recent years the granting of federal subsidies—sometimes referred to as "grants in aid"—to induce states to carry on intrastate activities suggested frequently in the first instance by officers and employees of the federal government. The use of federal subsidies to accomplish such federally determined activities has invariably involved federal control. Any state in actual need of financial aid from the federal government for the prevention of disease, the promotion of health and the care of the sick should be able to obtain aid in a medical emergency without stimulating every other state to seek and to accept similar aid and thus to have imposed on it the burden of federal control.

The mechanism by which this end is to be accomplished, whether through a federal agency to which any state in need of federal financial assistance can apply or through a new agency created for this purpose or through responsible officers of existing federal agencies, must be developed by the Executive and the Congress, who are charged with these duties. Such method would afford to every state an agency to which it might apply for federal assistance to enable it to care for its own people without involving every other state in the Union or the entire government in the transaction and without disturbing permanently the American concept of democratic government.

SUMMARY

1. The Wagner Health Bill does not recognize either the spirit or the text of the resolutions adopted by the House of Delegates of the American Medical Association in September 1938.

2. The House of Delegates cannot approve the methods by which the objectives of the National Health Program are to be obtained.

3. The Wagner Health Bill does not safeguard in any way the continued existence of the private practitioners who have always brought to the people the benefits of scientific research and treatment.

4. The Wagner Health Bill does not provide for the use of the thousands of vacant beds now available in hundreds of church and community general hospitals.

5. This bill proposes to make federal aid for medical care the rule rather than the exception.

6. The Wagner Health Bill does not recognize the need for suitable food, sanitary housing and the improvement of other environmental conditions necessary to the continuous prevention of disease.

7. The Wagner Health Bill insidiously promotes the development of a complete system of tax supported governmental medical care.

8. While the Wagner Health Bill provides compensation for loss of wages during illness, it also proposes to provide complete medical service in addition to such compensation.

9. The Wagner Health Bill provides for supreme federal control; federal agents are given authority to disapprove plans proposed by the individual states.

10. The Wagner Health Bill prescribes no method for determining the nature and extent of the needs for preventive and other medical services for which it proposes allotments of funds.

11. The Wagner Health Bill is inconsistent with the fundamental principles of medical care established by scientific medical experience and is therefore contrary to the best interests of the American people.

12. The fortunate health conditions which prevail in the United States cannot be dissociated from the prevailing standards and methods of medical practice.

13. No other profession and no other group have done more for the improvement of public health, the prevention of disease and the care of the sick than have the medical profession and the American Medical Association.

14. The American Medical Association would fail in its public trust if it neglected to express itself unmistakably and emphatically regarding any threat to the national health and well being. It must therefore, speaking with professional competence, oppose the Wagner Health Bill.

15. The House of Delegates would urge the development of a mechanism for meeting the needs for expansion of preventive medical services, extension of medical care for the indigent and the medically indigent, with local determination of needs and local control of administration, within the philosophy of the American form of government and without damage to the quality of medical service.

16. The fundamental question is how and when a state should be given financial aid by the federal government out of the resources of the states as a whole, pooled in the federal treasury.

17. The bizarre thinking which evolved the system of federal subsidies—sometimes called "grants-in-aid"—is used to induce states to carry on activities suggested frequently in the first instance by officers and employees of the federal government.

18. The use of federal subsidies to accomplish such federally determined activities has invariably involved federal control.

19. Any state in actual need for the prevention of disease, the promotion of health and the care of the sick should be able to obtain such aid in a medical emergency without stimulating every other state to seek and to accept similar aid, and thus to have imposed on it the burden of federal control.

20. The mechanism by which this end is to be accomplished, whether through a federal agency to which any state in need of federal financial assistance can apply, or through a new agency created for this purpose or through responsible officers of existing federal agencies, must be developed by the Executive and the Congress, who are charged with these duties.

21. Such a method would afford to every state an agency to which it might apply for federal assistance without involving every other state in the Union or the entire government in the transaction.

22. Such a method would not disturb permanently the American concept of democratic government.

Respectfully submitted.

WALTER F. DONALDSON, Chairman.
FREDERIC E. SONDERN.
WALTER E. VEST.
FRED W. RANKIN.
E. H. CARY.
HENRY A. LUCE.
HOWARD L. SNYDER.

On motion of Dr. E. L. Merritt, Massachusetts, seconded by Dr. Holman Taylor, Texas, and Dr. Virgil E. Simpson, Kentucky, and carried, a rising vote of thanks was extended by the House to the committee for the excellent work done.

On motion of Dr. H. A. Luce, Michigan, seconded by Dr. Peter Irving, New York, and carried, the House arose from Executive Session at 4:05 p. m.

The Speaker stated that the House had proceeded with the regular order of business prior to the Executive Session because the Reference Committee on Consideration of the Wagner National Health Bill had not been ready to report.

Dedication of Ephraim McDowell-Jane Todd Crawford Memorial Home

Dr. Irvin Abell, Retiring President, invited the members of the House of Delegates to attend the dedication of the Ephraim McDowell-Jane Todd Crawford Memorial Home at Danville, Ky., on Saturday, May 20, at 2 p. m.

On motion of Dr. William H. Myers, Georgia, seconded by several delegates and carried, the House recessed at 4:10 p. m.

Fourth Meeting—Thursday Afternoon, May 18

The House of Delegates was called to order at 1:15 p. m. by the Speaker, Dr. H. H. Shoulders.

Report of Reference Committee on Credentials

Dr. Deering G. Smith, Chairman, stated that a total of 168 delegates had been seated.

Roll Call

The Secretary called the roll and announced that more than a quorum had responded.

Presentation of the Minutes

It was moved by Dr. A. T. McCormack, Kentucky, seconded by Dr. George W. Kosmak, New York, and carried, that the House dispense with the reading of the minutes.

Report of Board of Trustees

Dr. A. A. Hayden, Secretary of the Board, at the request of its Chairman, Dr. Arthur W. Booth, presented a report, which as amended reads as follows:

With reference to the report of the Reference Committee on Reports of Board of Trustees and Secretary referred to the Board of Trustees for clarification, it is recognized that every component county medical society has the right of self government in local matters, including membership, by which arrangement many Negro physicians now hold membership in the American Medical Association.

Respecting governmentally directed health projects, the Board of Trustees emphatically deprecates discrimination against any competent and qualified physician because of race, color, creed or sex, which interferes with his right as a physician to serve those who desire to consult him.

The report of the Board of Trustees was adopted as amended on motion of Dr. John Q. Myers, North Carolina, seconded by Dr. McLain Rogers, Oklahoma, and carried after discussion.

Presentation of Dr. L. E. LeSouef

The Secretary presented to the House Dr. L. E. LeSouef, President-Elect of the West Australian Branch of the British Medical Association, a member of the Federal Council of the British Medical Association of Australia and a delegate for Australia to the International Congress on Military Medicine and Pharmacy at Washington, and the Chairman, representing the House, extended cordial greetings to Dr. LeSouef.

Report of Reference Committee on Amendments to the Constitution and By-Laws

Dr. Charles E. Mongan, Chairman, presented the following report, which, on motion of Dr. Mongan, seconded by Dr. John Z. Brown Sr., Utah, and carried after discussion, was adopted:

In regard to the resolutions offered by Dr. J. E. Paullin, Section on Practice of Medicine, proposing amendments to the By-Laws dealing with the Council on Medical Education and Hospitals, your reference committee proposes that the By-Laws be amended as follows: Amend chapter VIII, section 1, beginning with the sentence "The Council on Medical Education and Hospitals," line 4, page 19, and ending at the period in the ninth line on page 20 to read as follows: The Council on Medical Education and Hospitals shall consist of nine members each elected for nine years, one being elected each year: Provided three members be elected in 1940, one for nine years, one for eight years and one for seven years, and provided that the present members of the Council on Medical Education and Hospitals be continued as members until the terms for which they were elected shall have expired. The members of the Council shall be elected by the House of Delegates on nomination by the Board of Trustees, provided that the Board of Trustees shall place in nomination the names of three Fellows of the American Medical Association for each position. The members of the Council shall not be eligible for reelection. The Board of Trustees shall make their choice on the basis of securing for membership on the Council representation from general medical practice, special medical practice, medical education and graduate medical education. This Council shall prepare each year a report of its work and its recommendations, which shall be submitted to the House of Delegates.

Amend chapter IX, sec. 2, line 4, page 23, by inserting after the words "medical education" the words "including premedical, undergraduate and graduate medical education."

Respectfully submitted.

CHARLES E. MONGAN, Chairman.
T. K. GRUBER.
E. G. WOOD.
EDGAR A. HINES.
FELIX P. MILLER.

After the report of the reference committee was adopted, Dr. Mongan moved that the By-Laws be amended in accordance with the recommendation in the report of the reference committee. The motion was seconded and carried.

Report of Reference Committee on Reports of Board of Trustees and Secretary

Dr. John H. Fitzgibbon, Chairman, presented the following report, which was adopted on motion of Dr. Fitzgibbon, seconded by Dr. John Z. Brown Sr., Utah, and carried:

Your reference committee wishes to commend the report of the Committee on Medical Care. It believes that Dr. Leland and his associates deserve much credit for their able efforts in carrying out this survey and that the efforts and expenditure have been justified by the results.

Your reference committee agrees with the Committee on Medical Care as to the desirability of continuing this survey or making similar surveys in the future as the Board of Trustees may decide.

Your reference committee recommends that a brief summary of the results of the survey be published as soon as possible in the Organization Section of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

Respectfully submitted.

JOHN H. FITZGIBBON, Chairman.
J. NEWTON HUNSBERGER.
GRANT C. MADILL.
CHARLES W. ROBERTS.
W. F. BRAASCH.

ELECTION OF OFFICERS

The Speaker declared the next order of business to be the election of officers.

Election of President-Elect

Dr. Edward R. Cunniffe, New York, nominated for President-Elect Dr. Nathan B. Van Etten, New York, and the nomination was seconded by Drs. A. A. Walker, Alabama; John Q. Myers, North Carolina; E. G. Wood, Tennessee; J. Newton Hunsberger, Pennsylvania; H. A. Luce, Michigan; James E. Paullin, Section on Practice of Medicine; E. H. Cary, Texas; Arthur J. Bedell, Section on Ophthalmology; William R. Moloney Sr., California; Felix J. Underwood and Harvey F. Garrison, Mississippi; Walter E. Vest, West Virginia; Robert A. Peers, California; A. T. McCormack, Kentucky; W. F. Draper, United States Public Health Service; John Z. Brown Sr., Utah; Fred Moore, Iowa; Joseph F. Smith, Wisconsin, and Henry Cook Macatee, District of Columbia.

Dr. John Q. Myers, North Carolina, moved that the nominations be closed and that the Secretary be instructed to cast the unanimous ballot of the House of Delegates for Dr. Nathan B. Van Etten, and the motion was seconded by Drs. H. B. Everett, Tennessee, and A. T. McCormack, Kentucky, and carried.

The Secretary cast the unanimous ballot of the House for Dr. Nathan B. Van Etten, New York, for President-Elect of the American Medical Association, and the Speaker declared Dr. Van Etten so elected.

Election of Vice President

The Speaker announced that nominations for Vice President were in order and Dr. Harvey F. Garrison, Mississippi, placed in nomination the name of Dr. Alphonse McMahon, St. Louis. The nomination was seconded by Dr. A. T. McCormack, Kentucky.

Dr. H. A. Luce, Michigan, nominated Dr. Louis J. Hirschman, Detroit, and the nomination was seconded by Dr. C. R. Keyport, Michigan.

On motion of Dr. A. T. McCormack, Kentucky, seconded by Dr. John Q. Myers, North Carolina, and carried, the nominations were closed.

The Speaker asked the tellers to spread the ballot, and the Secretary announced that 147 delegates had been reported present and that 135 votes had been cast, of which Dr. Alphonse McMahon, St. Louis, received 93 and Dr. Louis J. Hirschman, Detroit, 42.

The Speaker declared that Dr. Alphonse McMahon, St. Louis, having received the majority of the votes cast, was elected Vice President of the American Medical Association, and on motion of Dr. H. A. Luce, Michigan, seconded by Dr. George W. Kosmak, New York, and carried unanimously, the action was declared unanimous.

Address of President-Elect Nathan B. Van Etten

Dr. E. R. Cunniffe, New York, presented the President-Elect of the American Medical Association, who addressed the House as follows:

Mr. Speaker, Members of the House of Delegates:

The friendly expression of this House is deeply appreciated. You have conferred on me the highest honor that can be given to an American physician. Through long association with you I am well acquainted with the strength of character and maturity of judgment which you usually maintain. After choosing a long line of the most distinguished specialists for your presidency, I fear that you are slipping a little when your choice falls on a general practitioner. Perhaps you are thinking that when the distinguished psychiatrist who is now our President finishes his psychoanalysis you may want a general practitioner to administer the treatment.

I have never aspired to this office because I have always known that many of my contemporaries are vastly more competent. I have also been led to an apprehension concerning my personal safety. Last January Dr. Sleyster left the security of the wilds of Wisconsin for a visit to the dangerous city of New York. He was heavily armed against the dangers which lurk around every corner. At the end of his visit he warned me against future perils. He put his hand in his hip pocket and presented me with one of his guns, which I always carry. He says that it is the latest streamline 1939 model and he made it himself (a slingshot). You see that if anybody brings a criminal indictment against me I am fully prepared.

Yesterday you adopted a report defining your position in relation to the proposed Wagner Health Bill. It was one of the best reports ever presented to this House. It defines our position and we must stand on it. It will have small value, however, unless the whole medical profession of the United States is educated to understand it fully. Every delegate must realize his official obligation as never before and carry home to every single practitioner in his state a full consciousness of the importance of this declaration of principles. That practitioner is potentially one of the most powerful persons in the democracy. If he can be made to see his duty to his country and educate his patients to a realization of the dangers of centralized control of medical practice, your action of yesterday will be sustained.

Gentlemen of the House, in the name of welfare the practice of medicine as you know it and as you hoped it would become is to be destroyed. The functions of the most highly educated group of professionals in the world are to be taken over by bureaus operated by adventurous amateurs. The time has come for the concerted action of every doctor in the United States. Wishful thinking on the part of you leaders of medicine will not be enough; every one must do his duty.

Election of Secretary

Dr. William R. Brooksher, Arkansas, nominated Dr. Olin West, Chicago, to succeed himself as Secretary, and the nomination was seconded by Dr. A. T. McCormack, Kentucky. Dr. McCormack moved that the nominations be closed and that the Vice Speaker be authorized to cast the ballot of the House for Dr. Olin West as Secretary. The motion was seconded by Dr. H. B. Everett, Tennessee, and by several other delegates, and carried unanimously.

The Vice Speaker cast the unanimous ballot of the House for Dr. Olin West as Secretary of the American Medical Association, and the Speaker declared Dr. West so elected for the ensuing year.

Election of Treasurer

Dr. Austin A. Hayden, Secretary of the Board of Trustees, reported that the Board desired to place before the House of Delegates the nomination of Dr. Herman L. Kretschmer, Chicago, for reelection as Treasurer of the Association.

It was moved by Dr. Arthur J. Bedell, Section on Ophthalmology, seconded by Dr. George W. Kosmak, New York, and carried, that the nomination be confirmed, and the Speaker declared Dr. Herman L. Kretschmer elected Treasurer of the American Medical Association for the ensuing year.

Election of Speaker of the House of Delegates

Dr. R. W. Fouts, Vice Speaker, took the chair and declared the next order of business to be the election of Speaker of the House of Delegates.

Dr. E. G. Wood, Tennessee, nominated for reelection as Speaker of the House of Delegates Dr. H. H. Shoulders, Nashville, Tenn., and the motion was seconded by Drs. H. B. Everett, Tennessee; A. A. Ross, Texas; Harvey F. Garrison, Mississippi; C. R. Keyport, Michigan; John Z. Brown Sr., Utah; John Q. Myers, North Carolina, and others.

Dr. W. Albert Cook, Oklahoma, moved that nominations be closed and that the Secretary be instructed to cast the ballot for Dr. H. H. Shoulders, Nashville, Tenn., as Speaker of the House, and the motion was seconded by Drs. Peter Irving, New York, and H. B. Everett, Tennessee, and carried.

The Secretary cast the unanimous ballot of the House for Dr. H. H. Shoulders, Nashville, Tenn., and the Vice Speaker declared Dr. Shoulders elected Speaker of the House for the ensuing year.

Election of Vice Speaker of the House of Delegates

The Speaker resumed the chair and announced that the next order of business was the election of a Vice Speaker of the House of Delegates.

Dr. H. L. Snyder, Kansas, nominated Dr. R. W. Fouts, Omaha, for reelection as Vice Speaker, and the nomination was seconded by Drs. Arthur J. Bedell, Section on Ophthalmology; James Q. Graves, Louisiana, and H. B. Everett, Tennessee.

Dr. McLain Rogers, Oklahoma, moved that the nominations be closed and that the Secretary be instructed to cast the ballot of the House for Dr. R. W. Fouts as Vice Speaker. The motion was seconded by Dr. W. E. Kittler, Illinois, and carried. The Secretary cast the unanimous ballot of the House for Dr. R. W. Fouts for Vice Speaker of the House, and the Speaker declared Dr. Fouts so elected for the ensuing year.

Election of Trustees

The Speaker declared the next order of business to be the election of two Trustees, each to serve five years, to succeed Drs. Roger I. Lee, Boston, and Allen H. Bunce, Atlanta, Ga., whose terms expire this year.

Dr. George Blumer, Connecticut, nominated Dr. Roger I. Lee to succeed himself as a Trustee, and the nomination was seconded by Drs. George W. Kosmak, New York; A. A. Walker, Alabama; Deering G. Smith, New Hampshire; Alfred T. Gundry, Maryland; Guy W. Wells, Rhode Island; Samuel P. Mengel, Pennsylvania; William A. Ellingwood, Maine; Walter E. Vest, West Virginia; Warren F. Draper, United States Public Health Service, and A. T. McCormack, Kentucky.

On motion of Dr. George W. Kosmak, New York, seconded by Dr. John Z. Brown Sr., Utah, and carried, the nominations were closed and the Secretary was directed to cast the ballot of the House for Dr. Roger I. Lee.

The Secretary cast the unanimous ballot of the House for Dr. Roger I. Lee, Boston, to succeed himself as a member of the Board of Trustees for a term of five years, and the Speaker declared Dr. Lee so elected.

The Speaker asked for nominations for Trustee to succeed Dr. Allen H. Bunce, Atlanta, Ga., who was ineligible, according to the By-Laws, to succeed himself.

Dr. A. T. McCormack, Kentucky, nominated Dr. E. L. Henderson, Louisville, Ky., to succeed Dr. Allen H. Bunce as Trustee of the American Medical Association and the nomination was seconded by Drs. Harvey F. Garrison, Mississippi; George M. Fisher, New York; T. K. Gruber, Michigan; Robert A. Peers, California, and E. H. Cary, Texas.

On motion of Dr. Edward M. Pallette, California, seconded by Dr. Felix J. Underwood, Mississippi, and carried, the nominations were closed and the Secretary was instructed to cast the ballot of the House for Dr. E. L. Henderson as Trustee.

The Secretary cast the unanimous ballot of the House for Dr. E. L. Henderson, Louisville, Ky., to succeed Dr. Allen H. Bunce, Atlanta, Ga., as a member of the Board of Trustees for a term of five years, and the Speaker declared Dr. E. L. Henderson so elected.

Appreciation of Trustee, Dr. Allen H. Bunce

Dr. Charles W. Roberts, Georgia, addressed the House as follows:

Mr. Speaker and Members of the House:

Sir Walter Scott in his "Love of Country" from "The Lay of the Last Minstrel" poignantly laments the unhappy ending of those whose lives are moored in the chilling fog of selfishness. Thus benighted, they sense none of the moving emotions which spring from the deeper reservoirs of the human heart. For such there is no real love of country, no plaudits for their fellows whose days are spent in fervent devotion to our American institutions. With souls so dead their passing, in the words of Scott, is "unwept, unhonored and unsung." But such laments were not spoken of the servants of the American Medical Association. I am moved, therefore, on this occasion to lay a small tribute at the feet of a group whose responsive natures lure them to perpetual battle against the enemies of life's eternal values. In this honored company we find the officers, trustees, councilmen, delegates and committees, yes, the rank and file of the membership of the American Medical Association whose high aims and purposes need no eulogy in this loyal assembly.

For we know that all great lives are not spent on fields of battle, not all great victories staged in the spotlight of public acclaim. Country and section and state and community still have the devoted services of a host of our fellow members who count it their reasonable duty to devote themselves unselfishly to the common good. Is it, then, inappropriate to yield on occasion to the patriotic impulse to applaud or to be considered as outmoded sentiment when a moment is taken to record, in the name of American medicine, a debt of gratitude which none would deny is due such an esteemed company? I hope not.

Moved, Mr. Speaker, by naught but a driving passion for the retention and preservation of our American way of life and the people's medical service, this preferred group of our fellows diligently labor with no thought of reward save a consciousness of duty well performed and a tradition bravely defended.

But may I be more specific. There are men who stand above their comrades because their restless souls yield to no defeat. Such a one is Dr. Allen H. Bunce, many years secretary of the Medical Association of Georgia and editor of its journal, leader and exemplar of the finest traditions of American medicine, loyal defender of its tenets when others were capitulating to the importunities of the ephemeral era. He has just concluded ten years of service on the Board of Trustees. We may be pardoned, I hope, for expressing, as he resumes his place among those who move in the humble places, a laudatory sentiment in your name and particularly in that of the great Southeastern section which he has so well represented. But Dr. Bunce is a young man. He looks forward. Those of us coming from the territory whose medical prerogatives he has so faithfully championed can but express the hope that his exceptional talents may suffer no obscurity because, according to custom, he must terminate his official connection with the Board of Trustees.

Moreover, speaking for myself and as one who has been privileged to live as his neighbor and thus to know of the depth and soundness of the motives which have guided his career, I am bold to voice the conviction that his contributions to the field of medical organization and clinical practice in the past will be complemented by no less fervor as he resumes the responsibilities of a mere Fellow in our beloved organization. United support of every effort directed at the preservation of

a great, free profession seems more than ever the need of the hour. To this end he will be found ready to serve whenever and wherever his colleagues may direct.

At the risk, therefore, of qualifying as a sentimentalist, I embrace the privilege of moving, and Mr. Speaker I do so move, that these comments be spread on the minutes of this House as a small token of appreciation of the spirit of service exemplified by the knights of our profession, particularly by that of the Board of Trustees on which Dr. Bunce has served with such unwavering fidelity. To him and to all who amidst the cheerless atmosphere of distrust and ill becoming complaint have nevertheless held fast to the traditions of our great calling, we pledge in a like spirit our unswerving loyalty. On their shoulders we would lay with ardent appreciation our cherished accolades.

The motion was seconded by Dr. William H. Myers, Georgia, John Q. Myers, North Carolina, Edgar A. Hines, South Carolina, John Z. Brown Sr., Utah, and Felix J. Underwood, Mississippi, and carried.

Presentation of Newly Elected Trustees

The Speaker requested Dr. Roger I. Lee and Dr. E. L. Henderson to present themselves to the chair to be recognized by the House. Dr. Lee asked to be presented from where he stood and Dr. Henderson addressed the House as follows:

Mr. Speaker and Members of the House of Delegates:

I want to thank you for the honor you have bestowed on me, and I appreciate greatly the confidence you have expressed in me. I wish to state that I will serve you to the very best of my ability.

Address of Vice President Alphonse McMahon

Dr. R. Emmet Kane, Missouri, presented Dr. Alphonse McMahon, who addressed the House as follows:

Mr. Chairman, I am actually rendered speechless and I have no notes in my pocket to refer to at this moment to help me through the situation. I don't know what to say to you except that I am very happy at the honor you have bestowed on me and I am particularly delighted at the opportunity to serve the American Medical Association in this capacity and in any other in which it may see fit to place me. I want to thank the American Medical Association again for having come to St. Louis and having given us an opportunity to provide entertainment. We feel that this year the history of the American Medical Association is one of the most momentous of all years. We think that history has been made in St. Louis by the action of this House of Delegates. Thank you again for this honor which you have given me.

Nominations for Standing Committees

Dr. Rock Sleyster, President, submitted the following nominations for standing committees:

Judicial Council: Dr. Edward R. Cunniffe, New York, to succeed himself, for a term ending in 1944; Dr. Holman Taylor, Fort Worth, Texas, to fill the unexpired term ending in 1942 of Dr. John W. Burns, deceased.

Council on Medical Education and Hospitals: Dr. Ray Lyman Wilbur, Stanford University, Calif., to succeed himself, for a term ending in 1946.

Council on Scientific Assembly: Dr. J. Gurney Taylor, Milwaukee, to succeed himself, for a term ending in 1944; Dr. Samuel P. Mengel, Wilkes-Barre, Pa., to fill the unexpired term ending in 1941 of Dr. J. C. Flippin, deceased.

The nominations of Dr. Edward R. Cunniffe and Dr. Holman Taylor for membership on the Judicial Council were confirmed on motions, duly seconded and carried.

The President stated that he was in doubt as to how the adoption of the amendments to the By-Laws at this meeting of the House affected the nomination to the Council on Medical Education and Hospitals at this session and requested a ruling.

After discussion, the Speaker ruled that with the consent of the House the amended By-Laws would take effect in 1940; that the By-Laws as in existence prior to the amendment were in existence at this time, and that the President should proceed with the nomination.

Dr. Samuel J. Kopetzky, New York, moved that the ruling of the Speaker be the sense of the House, and the motion was seconded by Dr. John Q. Myers, North Carolina, and many others, and carried.

The President's nomination of Dr. Ray Lyman Wilbur to succeed himself on the Council on Medical Education and Hospitals was confirmed on motion of Dr. Arthur J. Bedell, Section on Ophthalmology, seconded by Dr. Felix J. Underwood, Mississippi, and carried.

The nominations of Dr. J. Gurney Taylor, Milwaukee, and Dr. Samuel P. Mengel, Wilkes-Barre, Pa., for membership on the Council on Scientific Assembly were confirmed on motions duly seconded and carried.

Election of Affiliate and Associate Fellows

The Secretary presented the following nominations for Affiliate and Associate Fellowship, which, on motions duly seconded and carried, were confirmed by the House:

NOMINATIONS FOR AFFILIATE FELLOWSHIP APPROVED BY THE COUNCIL ON SCIENTIFIC ASSEMBLY

Adams, W. J., Norfolk, Va.
Barck, Carl, St. Louis.
Barnes, J. Steele, Milwaukee.
Blickensderfer, G. M., Denver.
Boisliniere, Louis C., St. Louis.
Breid, Jacob, Spickard, Mo.
Brown, Adelaide, San Francisco.
Campbell, Given, St. Louis.
Charles, Joseph W., St. Louis.
Child, Scott P., West Plains, Mo.
Cook, Emmett F., St. Joseph, Mo.
Croskey, John Welsh, Philadelphia.
Davison, Charles, Chicago.
Gaebler, Arthur, Chicago.
Gaines, S. E., Sparta, Tenn.
Garner, R. L., Milan, Mo.
Gillman, Robert W., Detroit.
Goodwin, Edward J., St. Louis.
Grimes, W. P., Kansas City, Mo.
Hall, D. Walton, Kansas City, Mo.
Harrison, Wallace K., Chicago.
Heusinkveld, Henry J., Fulton, Ill.
Hickok, H. S., Kansas City, Mo.
Hollis, Luther T., Kansas City, Mo.
Hoxie, George H., Kansas City, Mo.
Kauffman, Frank E., Clearwater, Fla.
Kuh, Edwin J., Chicago.
Laughlin, C. E., Evansville, Ind.
Leonard, Ward H., Kansas City, Mo.
Lewis, Bransford, St. Louis.
Lewis, Robert, New York.
Link, J. J., St. Louis.
Mardorf, W. Charles, St. Louis.
Middleton, James, Kansas City, Mo.
Miel, George W., Denver.
Moore, Josiah G., Mexico, Mo.
Murphy, R. Brent, St. Louis.
Myers, John L., Kansas City, Mo.
Neff, Frank C., Kansas City, Mo.
Norberg, George B., Kansas City, Mo.
Perkins, Jay, Stockton Springs, Me.
Phillips, N. W., Clear Lake, Iowa.
Piedalue, Joseph, Lewistown, Mont.
Redmond, Thomas, St. Joseph, Mo.
Rinehart, J. S., Camden, Ark.
Robinson, Ernest F., Kansas City, Mo.
Robinson, G. Wilse, Kansas City, Mo.
Rosenwald, Leon, Kansas City, Mo.
Schwarz, L. E., Chicago.
Scott, William P., Houghton, Mich.
Sherman, Frank M., Boston.
Shumate, David L., Kansas City, Mo.
Smith, Ellsworth S., St. Louis.
Southworth, Thomas S., New York.
Stapp, Fred B., Chattanooga, Tenn.
Taylor, Alfred S., New York.
Tilton, Benjamin T., New York.
Trimble, William K., Kansas City, Mo.
Turner, B. F., Memphis, Tenn.
Veach, Patrick H., Staunton, Ind.
Wilhelm, Francis E., Kansas City, Mo.
Zulick, Thomas C., Easton, Pa.

NOMINATION OF APPLICANT FOR ASSOCIATE FELLOWSHIP FROM FOREIGN COUNTRY ADJACENT TO THE UNITED STATES, APPROVED BY THE JUDICIAL COUNCIL

Boulanger, Joseph, Edmonton, Alberta, Canada.

NOMINATIONS OF AMERICAN MEDICAL MISSIONARIES FOR ASSOCIATE FELLOWSHIP APPROVED BY THE JUDICIAL COUNCIL

Bergsma, Stuart, Taxila, Punjab, North India.
Strain, Richard E., Modesto, Calif.

NOMINATIONS FOR ASSOCIATE FELLOWSHIP APPROVED BY THE SECTIONS INDICATED

PHARMACOLOGY AND THERAPEUTICS

Lehman, Arnold J., Washington, D. C.

PATHOLOGY AND PHYSIOLOGY

Simonsen, Daisy G., Monrovia, Calif.
Visscher, M. B., Minneapolis.

NERVOUS AND MENTAL DISEASES

Slight, David, Chicago.

Address of Dr. L. E. Le Souef

The Secretary presented Dr. L. E. Le Souef, President-Elect of the West Australian Branch of the British Medical Association, who addressed the House as follows: Mr. Speaker, Mr. President, Members of this Great House of Delegates of the American Medical Association: I desire to thank you for the great honor you have conferred on me in permitting me to be present with you this afternoon. Prior to leaving Australia I was present at our board, the Federal Council, when it was dealing with very similar problems to those which have been worrying you at present, that is the question of political control and national health insurance, as we quote it, in Australia. It is interesting to me to find that your problems are similar to ours, and I think in all the great English speaking countries of the world they always will be. To me it is interesting to see you protecting and guarding the highest ethical principles of the profession, and it is of interest to me to know that those principles are international in all their objects.

I have been struck in your country with something on which I should like to compliment you. I have seen a virility of thought and a humility born of wisdom and knowledge which have indeed humbled me in my tour through the States, and I only hope that the supremacy which you have achieved today will be emulated by the rest of the world and that the rest of us will strive to surpass you.

Place of 1942 Annual Session

Dr. Austin A. Hayden, Secretary of the Board of Trustees, presented the following report of the Board:

The Board wishes to report the receipt of invitations from Atlantic City and Philadelphia for the 1942 session of the Association. Both cities have adequate facilities for accommodating a session of the Association.

Dr. Andrew F. McBride, New Jersey, extended an invitation from the Medical Society of New Jersey to meet in Atlantic City, N. J., in 1942.

Dr. Francis F. Borzell, Pennsylvania, extended an invitation from the Philadelphia County Medical Society, the city of Philadelphia, the Medical Society of the State of Pennsylvania, and the physicians of Pennsylvania to meet in Philadelphia in 1942.

The tellers spread the ballot on request of the Speaker, and the Secretary announced that 147 delegates had been reported present and that 130 votes had been cast, of which Atlantic City received 84 and Philadelphia 46. The Speaker declared that the House of Delegates had selected Atlantic City in which to hold the 1942 annual session of the American Medical Association.

NEW BUSINESS

Resolution from the Section on Ophthalmology Requesting Appointment of Special Committee to Study All Phases of Problem of Prevention of Blindness

Dr. Arthur J. Bedell, Section on Ophthalmology, presented the following resolution, unanimously passed at the executive session of the section, which was adopted on motion of Dr. Bedell, seconded by Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, and carried:

WHEREAS, It is well known that many persons are blind and that a great many have defective sight; and

WHEREAS, An analysis of the records suggests the conclusion that in many cases the sight might have been saved had adequate protective measures been employed; and

WHEREAS, The preservation of human sight is of inestimable value to the individual; and

WHEREAS, A large percentage of the blind are or become public charges; therefore be it

Resolved, That the Section on Ophthalmology petition the House of Delegates to request the Board of Trustees of the American Medical Association to appoint a special committee to study all phases of the problem of prevention of blindness and that a report of its activities be made at the 1940 session of the House of Delegates.

Resolution on Transfer of Health and Medical Activities of Children's Bureau from Department of Labor to United States Public Health Service

Dr. A. T. McCormack asked for and received the unanimous consent of the House for the presentation of the following resolution by Dr. Walter E. Vest, West Virginia:

WHEREAS, The House of Delegates has for years past urged the unification of the health and medical activities of the federal government, except for the medical services of the Army and Navy; and

WHEREAS, These activities are at present widely scattered in various governmental agencies; therefore be it

Resolved, That the House of Delegates of the American Medical Association go on record as favoring: (1) That the health and medical activities of the Children's Bureau be transferred from the Department of Labor and placed with the United States Public Health Service; and (2) That the Division of Industrial Health remain in the United States Public Health Service, where it is now.

Dr. Vest moved the adoption of the resolution. The motion was seconded by Drs. John Z. Brown Sr., Utah, Harvey F. Garrison, Mississippi, and H. B. Everett, Tennessee, and, after discussion, failed to carry. The resolution was, therefore, not adopted.

Resolution on Optometry, from the Section on Ophthalmology

Dr. Arthur J. Bedell, Section on Ophthalmology, presented the following resolution, just received by him from the section, which was laid on the table:

WHEREAS, The problem of optometry is pressing for solution; and

WHEREAS, The previous regulations passed by the House of Delegates are widely ignored and do not command general approval by the members of the section; and

WHEREAS, It is proposed to have a careful study made and the problem presented in such form that a postal vote can be obtained based on real knowledge of the facts; therefore be it

Resolved, That the Section on Ophthalmology of the American Medical Association requests that the regulations of the American Medical Association concerning the optometry problem be suspended for one year pending thorough investigation by a special committee appointed by the chairman of the Section on Ophthalmology; and be it further

Resolved, That the delegate of the section be instructed to present this resolution to the House of Delegates and use his best efforts to have the resolution adopted.

Appointments to Committee on Distinguished Service Awards

The Speaker announced that three vacancies were created on the Committee on Distinguished Service Awards by the expiration of the terms of Drs. J. W. Amesse, Colorado, and J. D. Brook, Michigan, and by the resignation of Dr. E. L. Henderson, Kentucky.

The Speaker appointed Dr. A. A. Walker, Alabama, to succeed Dr. J. W. Amesse, and Dr. John H. O'Shea, Washington, to succeed Dr. J. D. Brook, each for a term of three years expiring in 1942, and Dr. Charles W. Stone, Ohio, for the unexpired term of Dr. E. L. Henderson ending in 1941. Drs. J. F. Hassig, Kansas, and Grant C. Madill, New York, are the other two members of the committee and their terms expire in 1940. The Speaker appointed Dr. Grant C. Madill as chairman of the committee.

Message to Dr. E. J. Goodwin

Dr. A. T. McCormack, Kentucky, asked for and received the unanimous consent of the House to present a motion that the President and Secretary convey to Dr. E. J. Goodwin, St. Louis, who was for many years a member of the House, and who is at present ill, the love and affection of the House and regret at his inability to be present during the session. The motion was seconded by several delegates and carried.

Message of Appreciation

Dr. Arthur J. Bedell, Section on Ophthalmology, moved that the House rise in expression of appreciation of the gracious kindness of their hosts shown toward the members of the American Medical Association since their arrival in St. Louis. The motion was seconded by Dr. George W. Kosmak, New York, and carried unanimously by a rising vote. The Secretary was requested to communicate this action to the proper committee.

The House of Delegates adjourned at 3:50 p. m., on motion of Dr. E. G. Wood, Tennessee, seconded by Dr. George W. Kosmak, New York, and carried.

MINUTES OF THE SECTIONS

SECTION ON PRACTICE OF MEDICINE

WEDNESDAY, MAY 17—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. N. C. Gilbert, Chicago.

Dr. John S. La Due, Minneapolis, read a paper on "The Treatment of Massive Hemorrhage Due to Peptic Ulcer." Discussed by Drs. Andrew B. Rivers, Rochester, Minn.; Kendall A. Elsom, Philadelphia; Horace W. Soper, St. Louis; L. Wallace Frank, Louisville, Ky.; Willard D. Mayer, Detroit; John M. Blackford, Seattle; Manfred Kraemer, Newark, N. J.; Walter L. Palmer, Chicago; S. Kendig Wallace, Baltimore; Gordon H. Ira, Jacksonville, Fla., and John S. La Due, Minneapolis.

Dr. Curtis F. Garvin, Cleveland, read a paper on "Complications Following the Administration of Sulfanilamide." Discussed by Drs. Francis G. Blake, New Haven, Conn.; Edwin G. Bannick, Seattle; B. K. Wiseman, Columbus, Ohio, and Curtis F. Garvin, Cleveland.

Dr. George Dock, Pasadena, Calif., delivered the Frank Billings Lecture, entitled "Historical Notes on Coronary Occlusion: from Heberden to Osler."

Dr. James H. Means, Boston, read a paper on "The Symptomatology of Lymphoma: Its Endless Variety." Discussed by Drs. Ralph A. Kinsella, St. Louis; Arthur W. Allen, Boston, and James H. Means, Boston.

Drs. Louis R. Limarzi and Emil Schleicher, Chicago, presented a paper on "The Reaction of Peripheral Blood and Bone Marrow in Chronic Hemorrhage and in Essential Thrombocytopenic Purpura."

Drs. Charles A. Doan, B. K. Wiseman and Sloan J. Wilson, Columbus, Ohio, presented a paper on "The Differential Diagnosis and Therapeutic Rationale in Thrombocytopenic Purpura."

These two papers were discussed by Drs. Carl V. Moore, St. Louis; W. M. Fowler, Iowa City; Edward P. Flood, the Bronx, New York; Louis R. Limarzi, Chicago, and B. K. Wiseman, Columbus, Ohio.

THURSDAY, MAY 18—MORNING

The following officers were elected: chairman, Dr. William S. McCann, Rochester, N. Y.; vice chairman, Dr. William B. Porter, Richmond, Va.; secretary, Dr. Fred M. Smith, Iowa City; executive committee, Dr. Francis G. Blake, New Haven, Conn., Dr. N. C. Gilbert, Chicago, and Dr. William S. McCann, Rochester, N. Y.; delegate, Dr. James E. Paullin, Atlanta, Ga.; alternate, Dr. Ernest E. Irons, Chicago; members of the American Board of Internal Medicine, Dr. John H. Musser, New Orleans, and Dr. William J. Kerr, San Francisco.

Drs. L. McKendree Eaton and Samuel F. Haines, Rochester, Minn., presented a paper on "Parathyroid Insufficiency with Symmetrical Cerebral Calcifications: Report of Three Cases, in One of Which the Patient was Treated with Dihydrotachysterol." Discussed by Drs. Fuller Albright, Boston; Peter Bassoe, Chicago; Cyril M. MacBryde, St. Louis; Samuel F. Haines, Rochester, Minn., and L. McKendree Eaton, Rochester, Minn.

Dr. N. C. Gilbert, Chicago, read the chairman's address, entitled "Vasomotor Changes in the Coronary Arteries and Their Possible Significance."

Dr. G. E. Hall, Toronto, read a paper on "Coronary Artery Reflexes in Acute Occlusion."

Drs. Geza de Takats and George K. Fenn, Chicago, presented a paper on "The Mechanism of Death in Pulmonary Embolism."

These two papers were discussed by Drs. A. R. Barnes, Rochester, Minn.; Alfred Blalock, Nashville, Tenn.; James H. Means, Boston; George K. Fenn, Chicago; G. E. Hall, Toronto, and Geza de Takats, Chicago.

Drs. F. L. Chamberlain and Paul D. White, Boston, presented a paper on "The Morgagni-Adams-Stokes Syndrome with Special Reference to Prognosis and Treatment." Discussed by Drs. Drew W. Luten, St. Louis; Fred M. Smith, Iowa City; Hugo A. Freund, Detroit; George K. Fenn, Chicago, and F. L. Chamberlain, Boston.

Dr. Edward F. Bland, Boston, read a paper on "The Delayed Appearance of Heart Disease After Rheumatic Fever."

Dr. William D. Stroud, Philadelphia, read a paper on "Fifteen Years' Observation of Children with Rheumatic Heart Disease."

These two papers were discussed by Drs. Helen B. Taussig, Baltimore; T. Duckett Jones, Boston; Edward F. Bland, Boston, and William D. Stroud, Philadelphia.

FRIDAY, MAY 19—MORNING

A joint meeting was held with the Section on Pharmacology and Therapeutics.

Dr. Clarence F. G. Brown, Chicago, and Dr. R. E. Dolkart, Boston, presented a paper on "An Evaluation of Therapy of Peptic Ulcer." Discussed by Drs. Chester M. Jones, Boston; William H. Olmsted, St. Louis; Andrew B. Rivers, Rochester, Minn., and Clarence F. G. Brown, Chicago.

Dr. Elmer L. Sevringhaus, Madison, Wis., read a paper on "Treatment of the Menopause." Discussed by Drs. August A. Werner, St. Louis, and Elmer L. Sevringhaus, Madison, Wis.

Dr. M. Herbert Barker, Chicago, read a paper on "Treatment of Pneumonia." Discussed by Drs. Jesse G. M. Bullowa, New York; Francis G. Blake, New Haven, Conn., and M. Herbert Barker, Chicago.

Dr. Lewis P. Gundry, Baltimore, read a paper on "Bromide Intoxication: Report of Fifteen Cases." Discussed by Drs. C. C. Underwood, Emporia, Kan.; Elmer L. DeGowin, Iowa City, and Lewis P. Gundry, Baltimore.

Dr. H. P. Smith, Iowa City, read a paper on "Clinical and Experimental Studies on Vitamin K."

Drs. Hugh R. Butt, Albert M. Snell and Arnold E. Osterberg, Rochester, Minn., presented a paper on "The Preoperative and Postoperative Use of Vitamin K in Cases of Obstructive Jaundice."

These two papers were discussed by Drs. I. S. Ravdin, Philadelphia; John D. Stewart, Boston; E. A. Doisy, Ph.D., St. Louis; J. D. Greaves, Ph.D., St. Louis; George V. LeRoy, Chicago; H. P. Smith, Iowa City, and Hugh R. Butt, Rochester, Minn.

SECTION ON SURGERY, GENERAL AND ABDOMINAL

WEDNESDAY, MAY 17, 1939—AFTERNOON

The meeting was called to order at 2:05 by the chairman, Dr. Henry W. Cave, New York.

Dr. Russell L. Haden, Cleveland, presented to the section through Dr. Fred W. Rankin, Lexington, Ky., a gavel made of wood from the home of Ephraim McDowell, which was accepted for the section by Dr. Frederick A. Coller, Ann Arbor, Mich. A motion was made by Dr. Coller, regularly seconded and carried, that a letter of appreciation be sent to Dr. Haden by the secretary.

Drs. Frederick A. Coller, Henry K. Ransom and Charles Sherrill Rife, Ann Arbor, Mich., presented a paper on "Reactions of the Peritoneum to Trauma and Infection: Further Experimental Studies."

Dr. Bernhard Steinberg, Toledo, Ohio, read a paper on "Stages in Peritonitis Based on the Defense Mechanism in Relation to Treatment."

Dr. George D. Lilly, Miami, Fla., read a paper on "Complications of Appendical Peritonitis."

These three papers were discussed by Drs. Claude F. Dixon, Rochester, Minn.; J. Shelton Horsley, Richmond, Va.; W. Wayne Babcock, Philadelphia; Alton Ochsner, New Orleans; Frederick A. Coller, Ann Arbor, Mich., and Bernhard Steinberg, Toledo, Ohio.

Drs. Walter M. Boothby, Charles W. Mayo and W. Randolph Lovelace II, Rochester, Minn., presented a paper on "One Hundred per Cent Oxygen: Indications for Its Use and Methods of Its Administration to Surgical Patients." Discussed by Drs. Alvan L. Barach, New York; Jacob Fine, Boston, and Walter M. Boothby, Rochester, Minn.

Drs. Loyal Davis and John Martin, Chicago, presented a paper on "Surgical Lesions in the Paratrigeminal Area." Discussed by Drs. Ernest Sachs, St. Louis, and Loyal Davis, Chicago.

Drs. Albert Behrend and Helena E. Riggs, Philadelphia, presented a paper on "Cerebral Complications Following Surgical Operation." Discussed by Drs. Henry K. Beecher, Boston; F. H. Lewy, Philadelphia, and Albert Behrend, Philadelphia.

THURSDAY, MAY 18—AFTERNOON

Drs. Alton Ochsner and Michael E. DeBakey, New Orleans, presented a paper on "Thrombophlebitis: The Etiologic Factor of Vasospasm and the Treatment by Sympathetic Block." Discussed by Drs. S. H. Sedwitz, Youngstown, Ohio; Geza de Takats, Chicago; John R. Paine, Minneapolis, and Alton Ochsner, New Orleans.

Dr. Frederic W. Taylor, Indianapolis, read a paper on "Arteriosclerotic Gangrene: Relation of the Amputation Stump to Morbidity and Mortality."

Dr. Henry H. Faxon, Boston, read a paper on "Major Amputations in Advanced Peripheral Arterial Obliterative Disease."

These two papers were discussed by Drs. Leland S. McKittrick, Boston; Geza de Takats, Chicago, and Henry H. Faxon, Boston.

Dr. Henry W. Cave, New York, read the chairman's address, entitled "Chronic Intractable Ulcerative Colitis: A Surgical Problem."

Dr. John D. Stewart, Boston, read a paper on "Control of the Hemorrhagic Tendency in Obstructive Jaundice by the Use of Vitamin K." Discussed by Drs. H. P. Smith, Iowa City; Hugh R. Butt, Rochester, Minn.; L. Wallace Frank, Louisville, Ky., and John D. Stewart, Boston.

Dr. Conrad J. Baumgartner, Los Angeles, read a paper on "Congenital Lesions of the Neck." Discussed by Drs. Herbert Willy Meyer, New York, and Conrad J. Baumgartner, Los Angeles.

Dr. Manuel Grodinsky, Omaha, read a paper on "Ludwig's Angina, Retropharyngeal Abscess and Other Deep Abscesses of the Head and Neck." Discussed by Drs. Frederick A. Coller, Ann Arbor, Mich.; Louis J. Birsner, St. Louis and Manuel Grodinsky, Omaha.

FRIDAY, MAY 19—AFTERNOON

Drs. Harvey B. Stone and Samuel McLanahan, Baltimore, presented a paper on "Surgical Aspects of Carcinoma of the Large Bowel." Discussed by Drs. James D. Rives, New Orleans; Leland S. McKittrick, Boston; Henry K. Ransom, Ann Arbor, Mich.; Claude F. Dixon, Rochester, Minn.; Frank H. Lahey, Boston, and Harvey B. Stone, Baltimore.

The following officers were elected: chairman, Dr. Thomas M. Joyce, Portland, Ore.; vice chairman, Dr. William Barclay Parsons, New York; secretary, Dr. Arthur W. Allen, Boston; executive committee, Dr. Hugh H. Trout, Roanoke, Va., Dr. Henry W. Cave, New York, and Dr. Thomas M. Joyce, Portland, Ore.; delegate, Dr. Fred W. Rankin, Lexington, Ky.; alternate, Dr. Robert S. Dinsmore, Cleveland; Board of Governors, American College of Surgeons, Dr. Fred W. Bailey, St. Louis; American Board of Anesthesiology, Dr. Ralph M. Tovell, Hartford, Conn.

Drs. I. S. Ravdin and Alfred Stengel Jr., Philadelphia, presented a paper on "Hypoproteinemia in Surgical Patients." Discussed by Drs. Chester M. Jones, Boston; Robert Elman, St. Louis, and I. S. Ravdin, Philadelphia.

Dr. Harold Lincoln Thompson, Los Angeles, read a paper on "The Immediate and Late Results of Surgical Treatment of Acute Perforation of Peptic Ulcer." Discussed by Drs. Dan C. Donald, Birmingham, Ala.; J. William Thompson, St. Louis; Charles Brown Odom, New Orleans, and Harold Lincoln Thompson, Los Angeles.

Dr. Harold L. Foss, Danville, Pa., read a paper on "Pathogenesis of Thyrotoxicosis with Crisis."

Dr. George Crile Jr., Cleveland, read a paper on "Lateral Aberrant Thyroid Tumors."

Dr. Frank H. Lahey, Boston, read a paper on "The Management of True Intrathoracic Goiter."

These three papers were discussed by Drs. Frederick A. Coller, Ann Arbor, Mich.; James H. Means, Boston; James Davidson Rives, New Orleans; Willard Bartlett Jr., St. Louis, and Harold L. Foss, Danville Pa.

SECTION ON OBSTETRICS AND GYNECOLOGY

WEDNESDAY, MAY 17—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. Harvey B. Matthews, Brooklyn.

The following papers were read as a symposium on "Lesions of the Vulva":

Dr. Rollo E. McCotter, Ann Arbor, Mich.: "The Structure of the Lower Portion of the Female Genital Tract."

Dr. Emmerich von Haam, Columbus, Ohio: "Venereal and Nonvenereal Granulomas of the Vulva."

Dr. Clair E. Folsome, Ann Arbor, Mich.: "Benign and Malignant Tumors of the Vulva."

Drs. Fred L. Adair and M. Edward Davis, Chicago: "Atrophy of the Vulva."

These four papers were discussed by Drs. Fred J. Taussig, St. Louis; Emil Novak, Baltimore; E. D. Plass, Iowa City; Rita S. Finkler, Newark, N. J.; Rollo E. McCotter, Ann Arbor, Mich., and Fred L. Adair, Chicago.

Dr. Edmund Lissack, Concordia, Mo., read a paper on "Backache During Pregnancy and Its Management." Discussed by Drs. Buford G. Hamilton, Kansas City, Mo.; G. D. Royston, St. Louis, and Joseph B. De Lee, Chicago.

Dr. E. L. King, New Orleans, read a paper on "The Role of Hypothyroidism in the Causation of Abortion, Especially of the 'Missed' Variety." Discussed by Drs. J. C. Litzenberg, Minneapolis; Jesse W. White, Pueblo, Colo., and Fred J. Taussig, St. Louis.

THURSDAY, MAY 18—MORNING

Dr. George W. Kosmak, New York, read a paper on "The Responsibility of the Medical Profession in the Movement for Birth Control." Discussed by Drs. Charles E. Galloway, Evanston, Ill.; Joseph L. Baer, Chicago; Fred L. Taussig, St. Louis; John Zell Gaston, Houston, Texas, and George W. Kosmak, New York.

Dr. Jacob Kotz, Washington, D. C., read a paper on "The Effects of Obstetric Analgesia on the Newborn Infant."

Drs. David C. Kimball, Wyman C. C. Cole and L. E. Daniels, Detroit, presented a paper on "Studies in Neonatal Asphyxia."

These two papers were discussed by Drs. C. O. McCormick, Indianapolis; Franklin F. Snyder, Chicago; Joseph B. De Lee, Chicago; L. Mason Lyons, Pierce City, Mo.; M. S. Lewis, Nashville, Tenn.; Meyer Bodansky, Galveston, Texas; G. D. Royston, St. Louis; Jacob Kotz, Washington, D. C., and Wyman C. C. Cole, Detroit.

Drs. Richard W. TeLinde and J. Donald Woodruff, Baltimore, presented a paper on "Postoperative Care of the Urinary Bladder." Discussed by Drs. George H. Gardner, Chicago, and William T. Kennedy, New York.

Dr. Harvey B. Matthews, Brooklyn, read the chairman's address, entitled "Obstetric Shock: Its Causes, Recognition and Management."

FRIDAY, MAY 19—MORNING

The following officers were elected: chairman, Dr. Ludwig A. Emge, San Francisco; vice chairman, Dr. Buford G. Hamilton, Kansas City, Mo.; secretary, Dr. Norman F. Miller, Ann Arbor, Mich.; delegate, Dr. George Gray Ward, New York; alternate, Dr. Jean Paul Pratt, Detroit; member of the Board of Governors, American College of Surgeons, Dr. Emil Novak, Baltimore.

Drs. Bernard Portis and Harold A. Roth, Chicago, presented a paper on "The Diagnosis and Treatment of Hyperthyrodism Associated with Pregnancy." Discussed by Drs. Robert D. Mussey, Rochester, Minn., and Bernard Portis, Chicago.

Dr. W. O. Johnson, Louisville, Ky., read a paper on "Diagnosis and Treatment of Varicosities of the Broad Ligament." Discussed by Drs. Thomas B. Sellers, New Orleans; Ralph R. Wilson, Kansas City, Mo., and W. O. Johnson, Louisville, Ky.

Dr. Joshua W. Davies, New York, read a paper on "Stress Urinary Incontinence and Its Relation to Cystocele." Discussed by Dr. R. J. Crossen, St. Louis.

Dr. S. Leon Israel, Philadelphia, read a paper on "A Study of Cervical Polyps." Discussed by Drs. Ludwig A. Emge, San Francisco; Harold S. Morgan, Lincoln, Neb.; Emil Novak, Baltimore; Fred L. Adair, Chicago, and S. Leon Israel, Philadelphia.

Dr. Walter T. Dannreuther, New York, read a paper on "The Treatment of Retrodisplacements of the Uterus." Discussed by Drs. Bertha Van Hoosen, Chicago; R. S. Cron, Milwaukee; Louis E. Phaneuf, Boston; Otto St. Clair Krebs, St. Louis; A. C. Hirschfield, Oklahoma City; William H. Vogt, St. Louis; Harvey B. Matthews, Brooklyn, and Walter T. Dannreuther, New York.

SECTION ON OPHTHALMOLOGY

WEDNESDAY, MAY 17—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. S. Judd Beach, Portland, Maine.

Dr. S. Judd Beach, Portland, Maine, read the chairman's address.

Dr. Allen Greenwood, Boston, read a paper on "Thoughts on Office Practice."

Dr. Walter B. Lancaster, Boston, read a paper on "A Simple Method of Plotting, Recording and Interpreting Disturbances of Ocular Motility."

It was recommended that the transactions for the coming year be dedicated to Dr. Allen Greenwood, Boston, and Dr. Walter B. Lancaster, Boston. The recommendation was adopted.

Dr. Sanford R. Gifford, Chicago, read a paper on "The Treatment of Secondary Glaucoma." Discussed by Drs. Edward C. Ellett, Memphis, Tenn.; Theodore L. Terry, Boston; Clifford B. Walker, Los Angeles, and Sanford R. Gifford, Chicago.

Drs. Everett L. Goar and Jacob F. Schultz, Houston, Texas, presented a paper on "Iridencleisis in Glaucoma." Discussed by Drs. Clyde A. Clapp, Baltimore; Thomas D. Allen, Chicago; Allen Greenwood, Boston; John Green, St. Louis; Michael Goldenburg, Chicago; Sanford R. Gifford, Chicago; John Oliver McReynolds, Dallas, Texas, and Jacob F. Schultz, Houston, Texas.

On motion duly seconded and carried, the following resolution was adopted by the section:

WHEREAS, In the latest national public health survey, it has been found that ninety persons in every 100,000 in the United States are blind, and that a vastly greater number have economically defective sight; and

WHEREAS, At a moderate estimate, in not less than one third of those who are blind the sight might have been saved had adequate protective measures been employed; and

WHEREAS, Not only is the preservation of human sight of inestimable value to the individual by rendering him capable of meeting the necessities of life, but a large proportion become wards of the nation instead of self-supporting citizens, thereby adding an enormous burden in taxes on those already heavily burdened people; therefore, be it

Resolved, That the Board of Trustees be requested to appoint a committee to investigate the conditions causing these losses of sight and to take such measures as will aid in diminishing the numbers who become unnecessarily blind.

Dr. Algernon B. Reese, New York, read a paper on "The Value of Early Operation in Chronic Primary Glaucoma." Discussed by Drs. Harry S. Gradle, Chicago, and Algernon B. Reese, New York.

Dr. Manual U. Troncoso, New York, read a paper on "Cyclodialysis with Metal Implant in the Treatment of Glaucoma." Discussed by Drs. Otis R. Wolfe, Marshalltown, Iowa, and Manuel U. Troncoso, New York.

THURSDAY, MAY 18—AFTERNOON

Dr. John J. Prendergast, St. Paul, read a paper on "Ocular Leprosy in the United States." Discussed by Drs. Gideon M. Van Poole, Honolulu, Hawaii; Forrest J. Pinkerton, Honolulu, Hawaii; Theodore J. Dimitry, New Orleans, and John J. Prendergast, St. Paul.

Executive Session

The section went into executive session to consider the following recommendation from the Committee on Optics and Visual Physiology:

"That the American Committee on Optics and Visual Physiology recommend to the Section on Ophthalmology of the American Medical Association that all resolutions of the American Medical Association concerning the optometry problem be suspended for one year, pending thorough investigation by a special committee; further,

"That the delegate of the section be instructed to present this resolution to the House of Delegates of the American Medical Association and use his best efforts to have this resolution adopted."

The recommendation was adopted, with fifty-three voting in favor and thirty-eight against.

Scientific Session

Dr. Frederick A. Davis, Madison, Wis., read a paper on "Primary Tumors of the Optic Nerve: A Phenomenon of von Recklinghausen's Disease; a Clinical and Pathologic Study with a Report of Five Cases and a Review of the Literature." Discussed by Drs. Percival Bailey, Chicago; Jesse M. Levitt, Brooklyn; F. Park Lewis, Buffalo; Alan C. Woods, Baltimore, and Frederick A. Davis, Madison, Wis.

Dr. Theodore L. Terry, Boston, read a paper on "Malignant Melanoma of Uvea—So-Called Sarcoma: Problems in Diagnosis." Discussed by Drs. Everett C. Moulton, Fort Smith, Ark.; Allen Greenwood, Boston; Charles H. May, New York, and Theodore L. Terry, Boston.

Drs. Alan C. Woods and Earl L. Burky, Baltimore, presented a paper on "Experimental Studies on Ocular Tuberculosis: IV. Studies in the Immune-Allergic Rabbit." Discussed by Drs. Martin Hayward Post, St. Louis, and Albert L. Brown, Cincinnati.

Dr. S. Rodman Irvine, Los Angeles, read a paper on "A Study of Exfoliation of the Lens Capsule, 'Glaucoma Capsularis,' with a Report of Forty Cases." Discussed by Drs. Daniel B. Kirby, New York; Parker Heath, Detroit; Arthur J. Bedell, Albany, N. Y.; Theodore L. Terry, Boston; Harry S. Gradle, Chicago, and S. Rodman Irvine, Los Angeles.

Dr. Milton L. Berliner, New York, read a paper on "Cataract Following Inhalation of Paradichlorobenzene." Discussed by Dr. James E. Lebensohn, Chicago.

Demonstration Session

Dr. Conrad Berens, New York, presented "A Modified Perlia Test for Depth Perception at the Middle Distance," "Visual Acuity Test Applicable to Large Groups of Subjects" and "Large Square Prisms of Thermoplastic Material."

Drs. Theodore L. Terry, Boston, and R. D. Mattis, St. Louis, presented "A Plastic Transilluminator."

FRIDAY, MAY 19—AFTERNOON

Executive Session

Dr. Derrick Vail, Cincinnati, the secretary, read the report of the Committee on Compensation Tables, in which it was stated that its work had not been completed and suggested that it be continued for another year, and that the name of the Committee be changed to "Committee on Visual Economics." The report was accepted.

Dr. Walter B. Lancaster, Boston, read the report of the Committee on Optics and Visual Physiology, which was accepted.

It was moved by Dr. Arthur J. Bedell, Albany, N. Y., seconded by Dr. Lancaster, and carried, that due notice be given through THE JOURNAL in relation to the nonacceptance of the commonly used school testing instruments.

The report of the Committee on the Knapp Testimonial Fund was presented by Dr. Parker Heath, Detroit. The report was accepted.

Dr. Derrick Vail, Cincinnati, reported for the Committee on Awarding the Knapp Medal that no award would be made this year.

The report of the Committee on the American Board of Ophthalmology was read by Dr. Derrick Vail, Cincinnati. The report was accepted.

Dr. Derrick Vail, Cincinnati, read the report of the Committee on National Museum of Ophthalmic Pathology. The report was accepted.

Dr. Arthur J. Bedell, Albany, N. Y., reported as delegate of the section to the House of Delegates. He stated that the resolution adopted by the section on Wednesday morning was unanimously passed by the House; also that the recommendation adopted by the section from the Committee on Optics and Visual Physiology was tabled in the House.

Dr. Derrick Vail, Cincinnati, read the report of the Committee on Museum of Ophthalmic History. The report was accepted.

Dr. Derrick Vail read the report of the Committee on Standardization of Drugs and Instruments. The report was accepted with thanks and the committee discharged.

A vote of thanks was extended the local committee.

A report from the Joint Committee on Orthoptics was read by Dr. Derrick Vail, the secretary.

Dr. William L. Benedict, Rochester, Minn., reported for the Advisory Committee on Student Health Council that the committee had met with the Student Health Committee on three different occasions during the past year, and they had designed a student floor lamp and table-type lamp that will give the standard illumination without glare and with proper spread. The designs have been submitted to manufacturers through the National Society for the Prevention of Blindness. A uniform record card for the recording of examination of students in the Student Health Association has been printed and distributed to all colleges that partake in this organization. In order to make it more uniform, the committee has designed and written specifications for the manufacture of illuminated eye test chart holder with lamp for muscle examinations, which tests were gotten up with the aid of the Electrical Testing Laboratories of New York, submitted to the Committee on Optics and Visual Physiology, and the plan was acceptable to that committee. The report was accepted.

Dr. T. E. Sanders, St. Louis, read the report of the Exhibit Committee of the Section. The report was accepted.

The following officers were elected: chairman, Dr. Harry S. Gradle, Chicago; vice chairman, Dr. Everett L. Goar, Houston, Texas; secretary, Dr. Derrick Vail, Cincinnati; delegate, Dr. Arthur J. Bedell, Albany, N. Y.; alternate, Dr. Lawrence T. Post, St. Louis.

Dr. Sanford R. Gifford, Chicago, was reappointed to the American Committee (Joint) on Optics and Visual Physiology for three years.

Dr. Allen Greenwood, Boston, was appointed to fill a vacancy on the American Board of Ophthalmology, to serve for four years beginning Jan. 1, 1940.

Dr. Jonas S. Friedenwald, Baltimore, was appointed to the Committee on National Museum of Ophthalmic Pathology (Joint).

Dr. Georgiana Dvorak Theobald, Oak Park, Ill., was reelected to fill the vacancy of chairman of the Committee for Scientific Exhibit from the Section. Dr. Derrick Vail, Cincinnati, and Dr. Algernon B. Reese, New York, were appointed as members of the Committee.

Dr. Cassius D. Wescott, Chicago, was appointed to fill a vacancy in the Committee on Museum of Ophthalmic History. Dr. Allen Greenwood, Boston, was elected chairman of the committee.

Dr. Derrick Vail, Cincinnati, was elected to the American Council on Orthoptics, representing the section, to serve for three years; Dr. George P. Guibor, Ottawa, Ill., to serve for two years, and Dr. Harold Gifford Jr., Omaha, to serve for one year.

Dr. William L. Benedict, Rochester, Minn., was reappointed to the advisory committee of the Student Health Association.

A committee of three members was formed, representing the section, to act with similar committees to be appointed from the American Ophthalmological Society of the American Academy of Ophthalmology and Oto-Laryngology, whose function shall be the study of the problem of abstracting ophthalmic literature. To this committee, to be known as the Committee on Ophthalmic Literature (Joint), were appointed Dr. Parker Heath, Detroit, chairman, Dr. Lawrence T. Post, St. Louis, and Dr. Theodore L. Terry, Boston.

Drs. Frederick H. Verhoeff, Boston; Arthur J. Bedell, Albany, N. Y., and Clifford B. Walker, Los Angeles, were elected to constitute the Knapp Medal Award Committee.

Scientific Session

Dr. Lowell S. Selling, Detroit, read a paper on "Examinations of the Eye and Their Significance in Traffic Court Cases." Discussed by Drs. Arthur J. Bedell, Albany, N. Y.; Albert C. Snell, Rochester, N. Y., and Lowell S. Selling, Detroit.

Dr. F. Park Lewis, Buffalo, read a paper on "Ophthalmology's Place in the Prevention of Blindness." Discussed by Drs. Edward V. L. Brown, Chicago; Conrad Berens, New York, and F. Park Lewis, Buffalo.

Dr. Julian Y. Malone, Milwaukee, read a paper on "Progressive Myopia, Keratoconus and Keratoglobus: Their Etiology and Treatment." Discussed by Drs. William L. Benedict, Rochester, Minn.; Meyer Wiener, St. Louis; Theodore L. Terry, Boston, and Julian Y. Malone, Milwaukee.

Drs. Abbott M. Dean, F. W. Dean and Guy R. McCutchan, Council Bluffs, Iowa, presented a paper on "Interstitial Keratitis Caused by Specific Sensitivity." Discussed by Drs. Albert D. Ruedemann, Cleveland, and Abbott M. Dean, Council Bluffs, Iowa.

On motion of Dr. Arthur J. Bedell, Albany, N. Y., duly seconded, a rising vote of thanks was extended the chairman, secretary and other officers of the section.

SECTION ON LARYNGOLOGY, OTOLOGY AND RHINOLOGY

WEDNESDAY, MAY 17—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. H. Marshall Taylor, Jacksonville, Fla.

Dr. Simon L. Ruskin, New York, read a paper on "The Arterial, Venous and Lymphatic Supply of the Nose and the Nervous and Hormonal Factors in Its Control." Discussed by Drs. O. Jason Dixon, Kansas City, Mo., and Louis J. Birsner, St. Louis.

Dr. Roy F. Nelson, Oakland, Calif., read a paper on "Sinus Surgery: Critical Analysis of Diagnosis and Technic in Operations on the Maxillary Sinus." Discussed by Drs. William Mithoefer, Cincinnati; Millard F. Arbuckle, St. Louis, and Roy F. Nelson, Oakland, Calif.

Dr. Ben L. Bryant, Los Angeles, read a paper on "Argyria Resulting from Intranasal Medication." Discussed by Dr. Gordon F. Harkness, Davenport, Iowa.

Dr. Thomas E. Carmody, Denver, read a paper on "Infection of the Mouth and Face." Discussed by Drs. August L. Beck, New Rochelle, N. Y.; Simon L. Ruskin, New York, and Thomas E. Carmody, Denver.

Dr. Gabriel Tucker, Philadelphia, read a paper on "The Management and Surgical Cure of Cancer of the Larynx." Discussed by Drs. Frederick A. Figi, Rochester, Minn.; LeRoy A. Schall, Boston; Joseph C. Beck, Chicago, and Gabriel Tucker, Philadelphia.

Dr. Austin A. Hayden, Chicago, showed slides and spoke briefly on Audiogram Standardization.

THURSDAY, MAY 18—MORNING

Executive Session

The following officers were elected: chairman, Dr. Arthur W. Proetz, St. Louis; vice chairman, Dr. F. T. Hill, Waterville, Maine; secretary, Dr. LeRoy A. Schall, Boston; executive com-

mittee, Gordon B. New, Rochester, Minn., H. Marshall Taylor, Jacksonville, Fla., and Arthur W. Proetz, St. Louis; delegate, Bert R. Shurly, Detroit; alternate, Gordon F. Harkness, Davenport, Iowa.

A letter was read regarding the tentative draft of school health policies. Drs. Bert R. Shurly, Detroit, George E. Shambaugh Jr., Chicago, and H. B. Searcy, Tuscaloosa, Ala., were appointed a committee to consider the draft.

Dr. John J. Shea, Memphis, Tenn., reported for the American Board of Otolaryngology as follows:

"The American Board of Otolaryngology held its thirty-seventh examination at the St. Louis University on May 11, 12 and 13. One hundred and eight candidates were examined, of whom eighty-four were given certificates, bringing the total to 2,889 certified otolaryngologists.

"For the information of many of the section, the board is composed of two representatives from each of the following: American Otological Society, American Laryngological Society, American Laryngological, Rhinological and Otological Society, American Academy of Ophthalmology and Otolaryngology, and the American Medical Association. This board in turn elects as associate members sufficient help for each examination.

"The minimum requirements for taking the board are one year rotating internship, one year basic training in otolaryngology and one year special internship on a certified otolaryngological service."

The report was accepted.

Scientific Session

Dr. H. Marshall Taylor, Jacksonville, Fla., read the chairman's address, entitled "Otitis and Sinusitis in the Swimmer."

Dr. Daniel S. Cunning, New York, read a paper on "Treatment of Otitic Meningitis: Surgery Plus Sulfanilamide."

Dr. John M. Converse, New York, read a paper on "Recurrence of Otitic Infections Due to Beta-Hemolytic Streptococci Following Inadequate Sulfanilamide Therapy."

These two papers were discussed by Drs. Wells P. Eagleton, Newark, N. J.; Bernard J. McMahon, St. Louis; Anchise A. Cirillo, New York, and P. Pierre Viole, Los Angeles.

Dr. V. H. Kazanjian, Boston, read a paper on "Reconstruction Following Radical Operation for Osteomyelitis of the Frontal Bone." Discussed by Drs. Harris P. Mosher, Boston, and Vilray P. Blair, St. Louis.

Dr. George E. Shambaugh Jr., Chicago, read a paper on "Diplacusis: A Localizing Symptom for Disease of the Organ of Corti; Theoretical Considerations, Clinical Observations and Practical Application." Discussed by Drs. Arthur W. Proetz, St. Louis, and George M. Coates, Philadelphia.

Dr. Edmund P. Fowler Jr., New York, read a paper on "Abnormal Movements Following Injury to the Facial Nerve." Discussed by Drs. Joseph A. Sullivan, Toronto, Canada; Ernest Sachs, St. Louis, and Edmund P. Fowler Jr., New York.

FRIDAY, MAY 19—MORNING

A joint meeting was held with the Section on Pediatrics.

Dr. John J. Shea, Memphis, Tenn., read a paper on "Rational Treatment of Sinusitis in Children." Discussed by Drs. Lee Wallace Dean Jr., St. Louis; Harris Hosen, Port Arthur, Texas; Clifford Sweet, Oakland, Calif.; T. E. Walsh, Chicago; George Piness, Los Angeles, and John J. Shea, Memphis, Tenn.

Dr. Horace J. Williams, Philadelphia, read a paper on "The Diagnosis and Treatment of Otitis Media in Children." Discussed by Drs. Dean M. Lierle, Iowa City; Borden S. Veeder, St. Louis; Charles Hendee Smith, New York; Clifford Sweet, Oakland, Calif.; Eugene Lee Myers, St. Louis, and Horace J. Williams, Philadelphia.

Drs. T. Duckett Jones and John R. Mote, Boston, presented a paper on "The Clinical Importance of Respiratory Infections in Rheumatic Fever." Discussed by Drs. William P. Wherry, Omaha; William D. Stroud, Philadelphia, and T. Duckett Jones, Boston.

Drs. George Piness and Hyman Miller, Los Angeles, presented a paper on "Upper Respiratory Allergy in Infancy and Childhood." Discussed by Drs. Francis M. Pottenger Jr., Monrovia, Calif., and George Piness, Los Angeles.

SECTION ON PEDIATRICS

WEDNESDAY, MAY 17—AFTERNOON

The meeting was called to order at 2:10 by the chairman, Dr. Edward Clay Mitchell, Memphis, Tenn.

Dr. M. Hines Roberts, Atlanta, Ga., read a paper on "A Study of Cerebral Hemorrhage in the Newborn." Discussed by Drs. Ralph M. Tyson, Philadelphia; Hugo Ehrenfest, St. Louis; Julius H. Hess, Chicago, and M. Hines Roberts, Atlanta, Ga.

Dr. Heyworth N. Sanford, Chicago, read a paper on "The Effect of Various Complementary Feedings on the Gain in Weight and Stimulation of Breast Milk During the Newborn Period." Discussed by Drs. Clifford G. Grulee, Evanston, Ill.; William J. Orr, Buffalo, and Heyworth N. Sanford, Chicago.

Dr. Edward Clay Mitchell, Memphis, Tenn., read the chairman's address, entitled "Child Health in National Defense."

Dr. Harry H. Donnally, Washington, read a paper on "Smallpox Vaccination of Infants: Revaccinations After Two to Three Years in Children Primarily Vaccinated with Culture Virus (Rivers), Compared with Those Primarily Vaccinated with Calf Lymph Virus." Discussed by Dr. Charles Armstrong, Washington, D. C.

Dr. M. G. Peterman, Milwaukee, read a paper on "Convulsions in Infancy and Childhood: A Report of One Thousand Cases." Discussed by Drs. Henry F. Helmholz, Rochester, Minn.; H. R. Cooder, Los Angeles; Clifford Sweet, Oakland, Calif., and M. G. Peterman, Milwaukee.

Dr. Warren W. Quillian, Coral Gables, Fla., read a paper on "Respiratory Infections: Types and Clinical Course as Observed in Florida Pediatric Practice." Discussed by Drs. Robert A. Strong, New Orleans, and Oscar Reiss, Los Angeles.

THURSDAY, MAY 18—AFTERNOON

Dr. Ralph M. Tyson, Philadelphia, chairman of the executive committee, presented the following resolutions, which, on motion regularly made and seconded, it was voted to approve:

WHEREAS, The American Medical Association is devoted to the best interests of all the physicians of the United States; and

WHEREAS, The Section on Pediatrics of the American Medical Association is a loyal constituent part of that Association, with interests which are identical with those of all other groups making up the American Medical Association; therefore, be it

Resolved, That we, the executive committee of the Section on Pediatrics, representing that section, do hereby indicate our wholehearted and unswerving loyalty to the American Medical Association; be it further

Resolved, That the Section on Pediatrics, through its executive committee, will endeavor to gather from the principal pediatric groups and all interested individuals engaged in the practice of pediatrics their ideas and suggestions for the advancement of the welfare of American medicine within the field of child study.

In order that the representative of the Section on Pediatrics in the House of Delegates may present such suggestions for the consideration and action of the said House of the American Medical Association.

RALPH M. TYSON, Chairman.
CLIFFORD SWEET.
EDWARD CLAY MITCHELL.

Resolved, That the Section on Pediatrics of the American Medical Association commend the American Legion for its interest in child welfare and offer its assistance for carrying out these plans where they have been prepared under pediatric leadership.

Dr. Ralph M. Tyson announced that Dr. Edward Clay Mitchell had been designated as the section representative to cooperate with the Child Health Director of the American Legion.

Speaking on behalf of the secretary of the Abraham Jacobi Memorial Fund, who was absent, Dr. Ralph M. Tyson reported that at the present time there is $7,502.62 in the treasury, and that very little money had been spent during the past year.

The executive committee recommended the appointment of Dr. Arthur H. Parmelee of Chicago and Dr. Wyman C. C. Cole of Detroit to represent the Section on Pediatrics as members of a committee from various organizations engaged in a

study on the Problems of the Fetus and the Newborn Infant. On motion regularly made, seconded and carried, the section approved the appointments as recommended.

The following officers were elected: chairman, Dr. Albert D. Kaiser, Rochester, N. Y.; vice chairman, Dr. Philip M. Stimson, New York; secretary, Dr. Hugh L. Dwyer, Kansas City, Mo.; executive committee, Dr. Clifford Sweet, Oakland, Calif., Dr. Edward Clay Mitchell, Memphis, Tenn., and Dr. Albert D. Kaiser, Rochester, N. Y.; delegate, Dr. William Weston, Columbia, S. C.; alternate, Dr. A. Graeme Mitchell, Cincinnati; representative to the Board of Pediatrics, Dr. Horton R. Casparis, Nashville, Tenn.; secretary and treasurer of the Abraham Jacobi Memorial Fund, Dr. Hugh L. Dwyer, Kansas City, Mo.

Dr. Oscar Reiss, Los Angeles, chairman of the resolutions committee, presented the report of that committee, as follows:

In behalf of the officers and members of the Section on Pediatrics of the American Medical Association here assembled in St. Louis for their ninetieth annual session, it is our privilege to offer to Dr. Jean V. Cooke, and the rest of the local contingent, our heartfelt appreciation of the magnificent hospitality they have extended to us.

We will all carry away a memory of the splendid scientific program and exhibits, and of the genial reception extended us by perfect hosts.

OSCAR REISS.
LEE FORREST HILL.
WILLIAM ORR.

Dr. Oscar Reiss moved that a copy of these resolutions be spread on the minutes of the section; regularly seconded and carried.

Dr. Henry F. Helmholz, Rochester, Minn., announced that the International Congress on Pediatrics will hold its meeting in Boston, Sept. 3, 4 and 5, 1940, and urged those who had not been solicited, and had exhibits of interest, to get in touch with Dr. Tom Mitchell. Dr. Helmholz extended thanks to the Abraham Jacobi Fund and, through it, to the section, for their generous contribution to meet the expenses of the congress.

Dr. Charles Gilmore Kerley, New York, read a paper on "Varying Manifestations of Thyroid Gland Aberrancies in Infants, Children and Adolescents." Discussed by Dr. Theodore T. Zuck, Cleveland, and Dr. Charles Gilmore Kerley, New York.

A panel discussion on the topic of "Management of Pneumonia in Infancy and Childhood" was conducted under the leadership of Dr. Charles Hendee Smith, New York, assisted by Drs. Alexis F. Hartmann, St. Louis; A. V. Stoesser, Minneapolis; Rosa Lee Nemir, New York, and Benjamin W. Carey Jr., Detroit. The subjects discussed were "Importance of Differentiating Pneumococcic (Lobar) Pneumonia and Bronchopneumonia," "Typing and Its Significance" and "Treatment: Sulfapyridine; Future of Serum; General."

FRIDAY, MAY 19—MORNING

A joint meeting was held with the Section on Laryngology, Otology and Rhinology. The proceedings are reported in the minutes of that section.

SECTION ON PHARMACOLOGY AND THERAPEUTICS

WEDNESDAY, MAY 17—AFTERNOON

The meeting was called to order at 2:05 by the chairman, Dr. Erwin E. Nelson, New Orleans.

Dr. P. C. Jeans, Iowa City, read a paper on "Treatment with Preparations Containing Vitamins A and D." Discussed by Drs. Alexis F. Hartmann, St. Louis, and P. C. Jeans, Iowa City.

Dr. Irving S. Wright, New York, read a paper on "Treatment with Vitamin C." Discussed by Drs. S. B. Wortis, New York, and Irving S. Wright, New York.

Drs. Willard O. Thompson and Norris J. Heckel, Chicago, presented a paper on "Treatment with Male Sex Hormones." Discussed by Dr. Elmer L. Sevringhaus, Madison, Wis.; Prof. Ernst Laqueur, Amsterdam, Holland, and Dr. Willard O. Thompson, Chicago.

Dr. H. L. Smith, Rochester, Minn., read a paper on "Treatment of Auricular Fibrillation." Discussed by Drs. Roy W. Scott, Cleveland; Frank J. Hirschboeck, Duluth, Minn.; Morris Margolin, Omaha; S. A. Weisman, Minneapolis, and H. L. Smith, Rochester, Minn.

Dr. I. J. Brightman, Brooklyn, read a paper on "Treatment of Edema by Rectal Administration of Diuretics." Discussed by Dr. Harold J. Stewart, New York.

Drs. Herbert K. Ensworth and Norman H. Plummer, New York, presented a paper on "Treatment of Pneumonia with Sulfapyridine." Discussed by Drs. Russell L. Cecil, New York; H. F. Flippin, Philadelphia; F. Janney Smith, Detroit; Lawrence D. Thompson, St. Louis; Jesse G. M. Bullowa, New York; Wheelan D. Sutliff, New York, and Herbert K. Ensworth, New York.

THURSDAY, MAY 18—AFTERNOON

The following officers were elected: chairman, Dr. Irving S. Wright, New York; vice chairman, Dr. C. M. M. Gruber, Philadelphia; secretary, Dr. E. V. Allen, Rochester, Minn.; delegate, Dr. Russell L. Haden, Cleveland; alternate, Dr. George R. Herrmann, Galveston, Texas; executive committee: Drs. Russell L. Haden, Cleveland, Erwin E. Nelson, New Orleans, and Irving S. Wright, New York.

Dr. Erwin E. Nelson, New Orleans, read the chairman's address, entitled "Variability in Response to Drugs."

Drs. William J. Kerr and P. A. Gliebe, San Francisco, Mayo H. Soley, San Mateo, Calif., and Nathan W. Shock, Berkeley, Calif., presented a paper on "Treatment of the Anxiety States with Special Attention to Certain Physiologic Manifestations." Discussed by Drs. Edward G. Billings, Denver; Fred M. Smith, Iowa City; Walter Freeman, Washington, D. C., and William J. Kerr, San Francisco.

Drs. Fuller Albright, Richard Chute and Hirsh W. Sulkowitch, Boston, presented a paper on "Nonsurgical Aspects of the Kidney Stone Problem." Discussed by Dr. Charles C. Higgins, Cleveland.

Dr. Louis N. Katz, Chicago, read a paper on "The Action of Drugs on the Caliber of the Coronary Vessels." Discussed by Drs. Fred M. Smith, Iowa City; George V. LeRoy, Chicago; George K. Fenn, Chicago; Erwin E. Nelson, New Orleans, and Louis N. Katz, Chicago.

Drs. J. B. Collip, A. H. Neufeld and O. F. Denstedt, Montreal, presented a paper on "The Effects of Pituitary Extracts on Metabolism." Discussed by Drs. Elmer L. Sevringhaus, Madison, Wis., and O. F. Denstedt, Montreal.

Dr. Lester B. Dragstedt, Chicago, read a paper on "The Present Status of Lipocaic." Discussed by Dr. David H. Rosenberg, Chicago.

FRIDAY, MAY 19—MORNING

A joint meeting was held with the Section on Practice of Medicine. The proceedings are reported in the minutes of that section.

SECTION ON PATHOLOGY AND PHYSIOLOGY

WEDNESDAY, MAY 17—MORNING

The meeting was called to order at 9:05 by the vice chairman, Dr. F. W. Hartman, Detroit.

Dr. M. B. Visscher, Minneapolis, read the chairman's address, entitled "The Restriction of the Coronary Flow as a Factor in Heart Failure." Discussed by Drs. Thomas K. Lewis, Birmingham, Ala., and M. B. Visscher, Minneapolis.

Dr. J. P. Simonds, Chicago, read a paper on "Experimental Studies on the Pathogenesis of Nephritis." Discussed by Drs. Mary B. Baughman, Richmond, Va.; George Milles, Chicago; R. H. Rigdon, Nashville, Tenn., and J. P. Simonds, Chicago.

Dr. Irvine H. Page, Indianapolis, read a paper on "The Production of Persistent Arterial Hypertension by Cellophane Perinephritis." Discussed by Drs. Alvin G. Foord, Pasadena, Calif., and Irvine H. Page, Indianapolis.

Drs. Lawrence W. Smith and Temple S. Fay, Philadelphia, presented a paper on "Temperature Factor in Cancer and

Embryonal Cell Growth." Discussed by Drs. Temple S. Fay, Philadelphia; Israel Davidsohn, Chicago; Mary B. Baughman, Richmond, Va.; F. W. Hartman, Detroit, and Lawrence W. Smith, Philadelphia.

Drs. Samuel H. Geist, Udall J. Salmon and Joseph A. Gaines, New York, presented a paper on "Biologic Effects of Androgens in the Human Female." Discussed by Prof. Ernst Laqueur, Amsterdam, Holland, and Drs. Harold S. Connamacher, Maplewood, N. J., and Udall J. Salmon, New York.

Dr. Frank W. Hartman, Detroit, read a paper on "The Correlation of the Pathologic Lesions and the Anoxia Resulting from Alcohol." Discussed by Drs. M. B. Visscher, Minneapolis; Charles L. Fox Jr., Boston, and Frank W. Hartman, Detroit.

Drs. H. J. Corper, Maurice L. Cohn and A. P. Damerow, Denver, presented a paper on "Relations Between Specific Immunity, Allergy and Anaphylaxis in Tuberculosis." Discussed by Drs. Emil Bogen, Olive View, Calif.; Camille Kereszturi, New York, and H. J. Corper, Denver.

A nominating committee was appointed, consisting of Drs. George Milles, Chicago, chairman; Joseph T. King, Minneapolis, and J. P. Simonds, Chicago.

THURSDAY MAY 18—MORNING

The following officers were elected: chairman, Dr. Frank W. Hartman, Detroit; vice chairman, Dr. Carl J. Wiggers, Cleveland; secretary, Dr. J. J. Moore, Chicago; delegate, Dr. L. W. Larson, Bismarck, N. D.; alternate, Dr. J. J. Moore, Chicago; executive committee, Dr. Roy R. Kracke, Emory University, Ga., Dr. M. B. Visscher, Minneapolis, and Dr. Frank W. Hartman, Detroit.

The following papers were read as a symposium on "Sulfanilamide":

Dr. Sanford M. Rosenthal, Washington, D. C.; "Experimental Chemotherapy with Sulfanilamide and Related Compounds." Discussed by Dr. Charles L. Fox Jr., Boston.

Dr. Joseph T. King, Minneapolis: "Tissue Culture Studies on the Bacteriostatic and Antitoxic Action of Sulfanilamide." Discussed by Dr. Charles L. Fox Jr., Boston.

Drs. Jesse G. M. Bullowa, New York; Edwin E. Osgood, Portland, Ore., and Samuel C. Bukantz, New York: "Effect of Sulfapyridine Alone and with Serum and in Serum of Treated Pneumonia Patients on Pneumococcus Infected Marrow Changes."

These three papers were discussed by Drs. Sanford M. Rosenthal, Washington, D. C.; Joseph T. King, Minneapolis; L. E. Shinn, Ph.D., Pittsburgh, and I. S. Ravdin, Philadelphia.

FRIDAY MAY 19—MORNING

A joint meeting was held with the Section on Nervous and Mental Diseases.

Dr. L. S. King, Princeton, N. J., read a paper on "The Neurotropic Viruses." Discussed by Drs. Robert G. Green, Minneapolis; Richard B. Richter, Chicago, and L. S. King, Princeton, N. J.

The following papers were presented as a symposium on "Vitamin Deficiency and Related Neural Disorders":

Dr. George R. Cowgill, New Haven, Conn.: "Vitamin Deficiencies and the Nervous System: A Consideration of the Contribution of Animal Experimentation."

Dr. F. H. Lewy, Philadelphia: "The Physiologic Action of the Vitamin B Complex."

Dr. Harry M. Zimmerman, New Haven, Conn.: "The Neuropathology of Vitamin B Deficiency."

Drs. Charles D. Aring, Tom D. Spies and J. P. Evans, Cincinnati: "Clinical Aspects of Vitamin B Deficiencies."

These four papers were discussed by Drs. Arthur Weil, Chicago; Hans H. Reese, Madison, Wis.; J. M. Nielsen, Los Angeles; Leo Alexander, Boston; George R. Cowgill, New Haven, Conn.; F. H. Lewy, Philadelphia; Harry M. Zimmerman, New Haven, Conn.; Richard M. Brickner, New York, and Charles D. Aring, Cincinnati.

SECTION ON NERVOUS AND MENTAL DISEASES

WEDNESDAY, MAY 17—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. Francis C. Grant, Philadelphia.

Drs. Ann S. Minot, Katherine Dodd and S. S. Riven, Nashville, Tenn., presented a paper on "The Use of Guanidine Compounds in the Treatment of Myasthenia Gravis."

Drs. Henry R. Viets and Robert S. Schwab, Boston, presented a paper on "Myasthenia Gravis."

These two papers were discussed by Drs. J. C. McKinley, Minneapolis; S. S. Riven, Nashville, Tenn.; Ann S. Minot, Nashville, Tenn., and Henry R. Viets, Boston.

Dr. Francis C. Grant, Philadelphia, read the chairman's address, entitled "The Surgical Treatment of Pituitary Adenomas."

Dr. M. C. Sosman, Boston, read a paper on "Irradiation in the Treatment of Pituitary Adenomas." Discussed by Drs. George W. Chamberlin, Philadelphia; Ernest Sachs, St. Louis, and M. C. Sosman, Boston.

Dr. Madelaine R. Brown, Boston, read a paper on "The Role of Potassium Chloride in the Treatment of Ménière's Syndrome."

Drs. A. W. Adson and M. N. Walsh, Rochester, Minn., presented a paper on "Ménière's Disease: Medical and Surgical Treatment."

These two papers were discussed by Drs. F. D. Lathrop, Ann Arbor, Mich.; John H. Talbott, Boston; M. N. Walsh, Rochester, Minn., and A. W. Adson, Rochester, Minn.

THURSDAY, MAY 18—AFTERNOON

The following officers were elected: chairman, Paul C. Bucy, Chicago; vice chairman, John F. Fulton, New Haven, Conn.; secretary, Johannes M. Nielsen, Los Angeles; executive committee: Samuel D. Ingham, Los Angeles, Francis C. Grant, Philadelphia, and Paul C. Bucy, Chicago; delegate, Henry R. Viets, Boston; alternate, R. P. Mackay, Chicago; representative to Scientific Exhibit, F. P. Moersch, Rochester, Minn.; representative on American Board of Psychiatry and Neurology, Hans H. Reese, Madison, Wis.; representative on proposed American Board of Neurosurgery, Paul C. Bucy, Chicago.

Dr. Walter Freeman, Washington, D. C., gave a report from the American Board of Psychiatry and Neurology, which was accepted.

A vote of thanks was given to Dr. Tom B. Throckmorton, Des Moines, Iowa, delegate to the House, and to Dr. Paul C. Bucy, Chicago, secretary.

Dr. Walter F. Schaller, San Francisco, read a paper on "The Post-Traumatic Psychoneurotic State and Traumatic Encephalopathy." Discussed by Drs. George W. Hall, Chicago; Sidney I. Schwab, St. Louis; Harry E. Mock, Chicago; R. P. Mackay, Chicago; Leopold Brahdy, New York, and Walter F. Schaller, San Francisco.

Drs. Stanley Cobb and M. E. Cohen, Boston, presented a paper on "The Differential Diagnosis of Anxiety Neurosis." Discussed by Drs. David Slight, Chicago; George W. Hall, Chicago; Walter F. Schaller, San Francisco, and M. E. Cohen, Boston.

Drs. H. T. Carmichael and J. H. Massermann, Chicago, presented a paper on "Results of Treatment in a Psychiatric Outpatient Department." Discussed by Drs. Lloyd H. Ziegler, Wauwatosa, Wis.; William Nelson, St. Louis; Walter Freeman, Washington, D. C.; U. G. Darling, Chicago, and H. T. Carmichael.

Dr. Tom B. Throckmorton, Des Moines, Iowa, delegate to the House, made a report on the session of the House of Delegates, which was accepted.

Dr. Joseph H. Globus, New York, read a paper on "Probable Topography of the Sleep-Regulating Center." Discussed by Drs. Percival Bailey, Chicago; John F. Fulton, New Haven, Conn., and Joseph H. Globus, New York.

Dr. J. M. Nielsen, Los Angeles, read a paper on "Delayed Paralysis of Nerves from Indirect Trauma." Discussed by Drs. L. J. Pollock, Chicago; R. B. Raney, Los Angeles; Percival Bailey, Chicago, and J. M. Nielsen, Los Angeles.

FRIDAY, MAY 19—MORNING

A joint meeting was held with the Section on Pathology and Physiology. The proceedings are reported in the minutes of that section.

SECTION ON DERMATOLOGY AND SYPHILOLOGY

WEDNESDAY, MAY 17—AFTERNOON

The meeting was called to order at 2:05 by the chairman, Dr. Bedford Shelmire, Dallas, Texas.

Dr. Bedford Shelmire read the chairman's address, "Weeds Causing Contact Eczema."

Drs. James W. Jordon and Earl D. Osborne, Buffalo, presented a paper on "Contact Dermatitis from Opium Derivatives with Special Reference to Occupational Aspects." Discussed by Drs. M. B. Sulzburger, New York; Bedford Shelmire, Dallas, Texas, and James W. Jordon, Buffalo.

Dr. Francis W. Lynch, St. Paul, read a paper on "A Clinical Study of Acne in University Students." Discussed by Drs. Joseph Gardner Hopkins, New York; R. L. Sutton Jr., Kansas City, Mo.; J. D. Farris, Richmond, Ky., and Francis W. Lynch, St. Paul.

Dr. Merlin T.-R. Maynard, San Jose, Calif., read a paper on "Vitamin Therapy in Dermatology, With Particular Reference to Vitamin D Effects in Acne and Diseases of Altered Calcium Usage." Discussed by Drs. Arthur G. Schoch, Dallas, Texas; Joseph Grindon Sr., St. Louis; Harry M. Robinson, Baltimore; C. J. Lunsford, Oakland, Calif.; M. B. Sulzberger, New York; R. L. Sutton Jr., Kansas City, Mo., and Merlin T.-R. Maynard, San Jose, Calif.

Drs. George M. MacKee and Anthony C. Cipollaro, New York, presented a paper on "Roentgen Dosages in Dermatology Expressed in International Roentgens." Discussed by Drs. Harry R. Foerster, Milwaukee; George C. Andrews, New York; C. Guy Lane, Boston, and Anthony C. Cipollaro, New York.

Drs. W. F. Spiller and W. B. Sharp, Galveston, Texas, presented a paper on "Gentian Violet Treatment of Scalp Ringworms." Discussed by Drs. Leslie M. Smith, El Paso, Texas, and W. F. Spiller, Galveston, Texas.

Drs. Elmore B. Tauber and Leon Goldman, Cincinnati, presented a paper on "Hypertherm Treatment in Skin Diseases." Discussed by Drs. Paul A. O'Leary, Rochester, Minn.; Julian E. Benjamin, Cincinnati, and Elmore B. Tauber, Cincinnati.

Dr. George W. Binkley, Cleveland, read a paper on "Dermatofibrosarcoma Protuberans, with a Report of Six Cases." Discussed by Drs. John H. Lamb, Oklahoma City; Hamilton Montgomery, Rochester, Minn.; Fred D. Wiedman, Philadelphia, and George W. Binkley, Cleveland.

THURSDAY, MAY 18—AFTERNOON

Dr. Hamilton Montgomery, Rochester, Minn., chairman of the Committee on Scientific Exhibit, presented the report of the committee as follows:

Following Dr. O'Leary's suggestion regarding the use of colored motion pictures, it was decided to have a joint motion picture exhibit and various members of the section were asked if they cared to contribute to such an exhibit. Different subjects were chosen by or assigned to the various individuals. This is the first time that the section has tried such an exhibit. Hence it should be looked on as a preliminary effort. Some of the contributors found it difficult to get suitable subjects who were willing to have motion pictures taken of their lesions. The technical difficulties of the use of colored film in dermatology can best be worked out through experience. We hope that a start has been made in the right direction and that the section will feel it worth while continuing with a series of motion pictures next year. Any one interested in participating in a motion picture exhibit is asked to communicate with me at once, as experience shows that much time is necessary in order to work up a given subject or dermatosis properly.

If we keep up this motion picture exhibit next year, plans can be worked out and we shall take other subjects than we took this year. I wish any one would get in touch with me or the representatives from the section so that we can get started on it right away. You think it is easy to pick up a lot of patients with psoriasis or acne, even, then when you try to find them, they don't come in for a couple of months or more.

I wish to express my deepest appreciation to those who cooperated in the motion picture exhibit. In regard to the various exhibits in the section, we were, as usual, unable to accept all the applications that were received because of lack of space. Dr. Clark Finnerud, former chairman, was of great assistance to me in this phase of the work, as was also Dr. Hull.

Our bank account, as a result of the usual donation from the American Medical Association of $25 a year, remains $92.85, as compared to $88.75, as turned over to me by Dr. Finnerud last year.

The chairman appointed Drs. Everett S. Lain, Oklahoma City; Howard King, Nashville, Tenn., and A. H. Lancaster, Knoxville, Tenn., a committee to audit the books of the Committee on Scientific Exhibit.

Dr. Elmore B. Tauber, Cincinnati, reported on the International Dermatological Congress as follows:

As all of you know, the International Dermatological Congress is to meet in New York in 1940 in September. Preliminary to this meeting to make it a success from the scientific point of view, from the social point of view, unfortunately, money is necessary. You all know that Dr. Ormsby is general chairman; Dr. O'Leary is secretary general, and I am chairman of the finance committee.

We decided to have a voluntary assessment of the dermatologists of America. We wanted to make this congress a great success from every point of view from all that has gone before and, if possible, to make it even a greater one than any of the preceding ones. To do this requires a certain amount of funds. This voluntary assessment was suggested of $15 per man practicing dermatology exclusively. We have had a good deal of trouble getting this money together, but it is beginning to take better shape. So this is just another plea, but it is an urgent plea. We really need this. We want to quiet any misapprehensions that may have existed. There is no subsidizing of any man at all. The only way we shall give them anything possibly will be some social function such as a banquet or smoker or something of the sort.

We have a budget prepared of what is necessary. This budget I am going to pass around so each of you can see it. It is taken up with employees, publicity contract, communications, printing, exhibits, rental for meeting places, entertainment and possible contingencies. So we really must have this nucleus so we can start the work. Dr. O'Leary will tell you later on what has been done in both a scientific way and in the way of clearing this up. We are going to have probably anywhere from thirty to thirty-five countries represented, and in these times we certainly want to have a scientific amity, because these are troubled times and we want to show what we can do.

I am not only going to ask to pass copies of the budget around, but I have some cards which will allow you, if you haven't already done so, to put your name down for the amount that you wish to contribute. The minimum we have fixed at $15, but the sky is the limit. If you will sign these and give them to Dr. Lehmann, he will turn them over to me later on."

Dr. Lain reported that the auditing committee found the books and accounts well kept and correct.

On motion by Dr. Paul A. O'Leary, Rochester, Minn., seconded by Dr. James Herbert Mitchell, it was voted to accept the report of the Auditing committee.

Dr. C. Guy Lane, Boston, presented the following report of the American Board of Dermatology and Syphilology:

During 1938 there were two meetings of the board, one in San Francisco in June and the other in St. Louis in November at the time of the meeting of the academy.

Thirty-two candidates were examined in San Francisco and thirty-four in St. Louis, making a total of sixty-six examined. Of this number, twelve were conditioned, six failed and forty-eight passed. It is of interest to note that a total of 278 have been examined. There have been forty failures to pass the examination in the eight examinations which the board has conducted, and thirty-eight have been conditioned. About one-third of these have been certified on subsequent reexamination. There has been a total of 531 applications, and there are now 415 diplomates.

At the San Francisco meeting the resignation of Dr. Howard Morrow, submitted on account of illness, was accepted with great regret, and Dr. Paul A. O'Leary was elected for the unexpired term. At this meeting also the matter of representation of the Academy of Dermatology and Syphilology on the board was discussed. It was voted to ask the academy to designate three members for the board, subject to ratification by the American Dermatological Association and the Section on Dermatology and Syphilology of the American Medical Association, of the new plan whereby the board shall consist of a total of nine members, three each from the American Dermatological Association, the Section on Dermatology and Syphilology and the Academy of Dermatology and Syphilology, to take effect when ratified by the last one of these three.

At the St. Louis meeting Dr. George M. MacKee, New York, tendered his resignation from the board on account of illness. His resignation was accepted with great regret and Dr. J. Gardner Hopkins of New York was elected for the unexpired term. At this meeting the matter of a syllabus dealing with graduate training in dermatology and with the qualifications of preceptors were major items of business.

During the last four years ten drafts of a syllabus for graduate training have been submitted to the board for discussion. There has been a great deal of correspondence and much serious discussion over such a syllabus, and this syllabus has just been published and is now ready for distribution. The qualifications of preceptors and application blanks will be available within a short time.

At the recent meeting of the Advisory Board for Medical Specialties in Chicago in February, at which representatives of all the specialty boards met with representatives of other national organizations concerned with graduate training, several matters of importance developed.

It was voted to publish a directory of specialists containing both alphabetical and geographic listing, together with information about each board. The various boards are contributing to the publication of this directory on a refunding basis. This directory has every prospect of being self supporting when once started. Second in importance was the matter of cooperation in the evaluation of training centers as agreed on between the Council on Medical Education and Hospitals and the American Board of Radiology. The American Board of Pathology has since adopted a similar cooperative evaluation, and the other boards will probably cooperate with the Council in the actual inspection and approval of the various opportunities for graduate training throughout the country, especially with regard to the three year training requirement which has been adopted by all the specialty boards. This board is at present engaged in the study of this matter, and conferences will be held with members of the Council at this A. M. A. meeting. A third matter of importance is the announcement of a National Council of Medical Education, Hospitals and Licensure, on which the Advisory Board for Medical Specialties will have representation. This body has been created by representatives of various national organizations to deal with various phases of medical education, especially the cooperative consideration of those problems and programs of professional training with which more than one organization is concerned.

Submitted by the American Board of Dermatology and Syphilology.

C. GUY LANE, Secretary.

On motion by Dr. R. C. Jamieson, Detroit, seconded by Dr. Paul A. O'Leary, Rochester, Minn., it was voted to accept the report of the American Board of Dermatology and Syphilology.

Dr. Paul A. O'Leary, Rochester, Minn., reported for the Committee on the International Congress on Dermatology and Syphilology, as follows:

Dr. Tauber has discussed the financial situation and I think this sheet that is being passed around will probably bring out some factors that explain to you why we want $15,000 from the dermatologists. We have a tentative budget of approximately $50,000 for the congress and I know that when I say that there will be men around the country who will immediately think that we are going to import some foreign dermatologists. Dr. Tauber made that point very clear and I would like to reemphasize it again, because the men still seem to have the idea in their mind that $50,000 is too much money for a congress. I believe that as you look over the budget you will find we have been very conservative in our estimate in most of the appropriation, so that the $15,000 that we are asking for from the American dermatologists is not enough. At the moment we have an outside source that may help us very materially. If it will help us, it will be a very fine thing. If it will not help us, in other words if we do not be the contribution we are anticipating, there may be further effort to raise money from among you men. However, we don't feel that will be necessary.

I want to say that my enthusiasm during the past year has varied from hot to cold in regard to the congress, primarily because of the lack of reaction on the part of the foreigners up, I might say, until about two months ago. Since that time I have had some fifty applications for space on the volunteer program. In other words, there has been apparently, as far as correspondence might lead one to believe, a rather definite change in favor, or you might say there has been a definite evidence of demonstration of enthusiasm perhaps for the congress. So I feel that during the past two months at least we have had sufficient evidence to believe that we shall have a very definite degree of enthusiasm from the European dermatologists.

There was a notice in the last issue of the *Archives* asking for men to request a place on the volunteer program. The program is made essentially in three parts. There is to be a group of symposiums, about eleven different selected subjects, for which invited speakers from the world have been asked to participate and practically all the symposiums are filled at the moment. In fact, the only ones that have not been selected are the American.

In addition, there will be a series of volunteer papers. By volunteer papers we mean the afternoon sessions, because the symposiums will be held in the morning. In other words, there will be a one ring circus in the morning and in the afternoon probably two and maybe three. We hope we can eliminate the third and limit it to two sessions.

There will be in addition a symposium on syphilis and a meeting of the International Committee against Venereal Disease which will incorporate a few papers on gonorrhea. So that those of you who have an interest or have a thought of presenting a paper before the congress, I hope you will send in an application immediately, however not other than a title. In other words, just display, if you will, to us, now the fact that you are interested and that you may present or would like to present something before the congress.

The one different thing we are endeavoring to insist on as a program committee is that papers be limited to original work. We are not anxious for a historical review of some old dermatosis nor are we interested in a single case report; but we are interested, of course, in receiving applications from individuals who have at least an original contribution to make. So will you send those in?

At the same time, of course, we are interested in a scientific exhibit. Dr. Joseph Gardner Hopkins is going to be in charge of that exhibit and I know he feels as I do, if you will let us know as soon as possible so we may get some idea as to the amount of space necessary, it will help very materially in the organization.

On motion by Dr. Elmore B. Tauber, Cincinnati, seconded by Dr. Richard S. Weiss, St. Louis, it was voted to adopt Dr. O'Leary's report.

Dr. C. Guy Lane, Boston, made the following report for the Committee on Industrial Dermatoses:

I simply want to make a brief report of the Committee on Industrial Dermatoses, which has been acting during the past three or four years. A joint meeting was held yesterday with the committee of the American Dermatological Association and representatives of the Public Health Service. Their report of the dermatologic activities of the Council on Industrial Health was read and discussed. Plans for participation in the industrial symposium of the International Congress were also presented and discussed at that time.

The formulation of the standardizing definitions and criteria for diagnosis of industrial dermatoses was begun. There was discussion of plans for coordinating the activity in this par-

ticular field with the American Medical Association activities and those of the Public Health Service as well.

On motion by Dr. Paul A. O'Leary, Rochester, Minn., seconded by Dr. Elmore B. Tauber, Cincinnati, it was voted to adopt Dr. Lane's report.

Under new business, Dr. Fred D. Weidman, Philadelphia, stated that it would be desirable to take action on the recommendation of Dr. Lane about the members on the American Board of Dermatology and moved that the executive committee be given power to act in the matter of designation of members to the American Board of Dermatology, in accordance with the principles outlined in Dr. Lane's report, particularly with reference to the American Academy.

Dr. C. Guy Lane, Boston, requested that the motion include the approval of the plan to have only three members from this section as well as from the other three national organizations and the details of arrangement of that plan be left to the executive committee. The motion was seconded, as amended, by Dr. Hamilton Montgomery, Rochester, Minn., and carried.

Drs. Joseph V. Klauder and Alfred Cowan, Philadelphia, presented a paper on "Corneal Examination and Slit Lamp Microscopy in Diagnosis of Late Congenital Syphilis Especially in Adults." Discussed by Drs. James R. Driver, Cleveland; John McLeod, Kansas City, Mo., and Joseph V. Klauder, Philadelphia.

Drs. G. Marshall Crawford and Leon F. Ray, Boston, presented a paper on "Serologic Discrepancies in Syphilis." Discussed by Drs. C. Guy Lane, Boston; G. V. Kulchar, San Francisco; Charles R. Rein, New York; Arthur G. Schoch, Dallas, Texas, and G. Marshall Crawford, Boston.

Drs. Charles R. Rein and Fed Wise, New York, presented a paper on "Mapharsen in Treatment of Syphilis in Office Practice, A Study Based on 2,342 Injections in 113 Patients." Discussed by Drs. Girsch D. Astrachan, New York; Harry M. Robinson, Baltimore; S. William Becker, Chicago; Leon Goldman, Cincinnati, and Charles R. Rein, New York.

Dr. Robert B. Greenblatt, August, Ga., presented a paper on "Experimental and Clinical Granuloma Inguinale." Discussed by Drs. Harry M. Robinson, Baltimore; S. William Becker, Chicago; Arthur G. Schoch, Dallas, Texas; Samuel Goldblatt, Cincinnati; Fred D. Weidman, Philadelphia; W. A. De Monbreun, Nashville, Tenn., and Robert B. Greenblatt, Augusta, Ga.

Drs. Kathleen B. Muir, Evangeline Stenhouse and S. William Becker, Chicago, presented a paper on "The Action of Sodium Thiosulfate, Sodium p-Sulphydril Phenyl Sulfonate and Sodium Formaldehyde Sulfoxylate in Arsenical and Mercurial Poisoning in Rabbits." Discussed by Drs. Charles C. Dennie, Kansas City, Mo.; Samuel Goldblatt, Cincinnati, and S. William Becker, Chicago.

Dr. Theodore Cornbleet, Chicago, read a paper on "Cutaneous Carbohydrates: I. The Normal Skin." Discussed by Drs. G. V. Kulchar, San Francisco; M. B. Sulzberger, New York, and Theodore Cornbleet, Chicago.

Dr. John H. Talbott, Boston, read a paper on "Pemphigus." Discussed by Drs. Richard S. Weiss, St. Louis; C. Guy Lane, Boston; M. F. Engman, St. Louis; M. B. Sulzberger, New York; Theodore Cornbleet, Chicago, and John H. Talbott, Boston.

FRIDAY MAY 19—AFTERNOON

The chairman stated that he had received a communication inviting the members to attend the fiftieth anniversary meeting of the German Dermatological Society, August 19-21, at Würzburg, Germany.

Dr. Francis E. Senear, Chicago, moved that the chairman of the section appoint a committee of three to cooperate with those appointed from the American Dermatological Association, the Academy and the investigative society, on the matter of administration of the new act covering foods, drugs and cosmetics, with regard to reporting irritants which produce dermatoses and whereby such information would be made available. The motion was seconded by Dr. R. C. Jamieson, Detroit, and carried.

The chairman then appointed the following committee: Drs. Francis E. Senear, Chicago; C. Guy Lane, Boston, and Nelson Paul Anderson, Los Angeles.

The following officers were elected: chairman, Dr. John G. Downing, Boston; vice chairman, Dr. Richard S. Weiss, St. Louis; Secretary, Dr. C. F. Lehmann, San Antonio, Texas; delegate, Dr. Clyde Cummer, Cleveland; alternate, Dr. Harold N. Cole, Cleveland; chairman of Scientific Exhibit Committee, Dr. Hamilton Montgomery, Rochester, Minn.; representative to the American Board of Dermatology and Syphilology, Dr. Joseph Gardner Hopkins, New York.

Drs. H. L. Williams Jr., Hamilton Montgomery and William N. Powell, Rochester, Minn., presented a paper on "Dermatitis of the Ear." Discussed by Drs. James Herbert Mitchell, Chicago; M. F. Engman, St. Louis, and Hamilton Montgomery, Rochester, Minn.

Drs. William Howard Hailey and Hugh E. Hailey, Atlanta, Ga., presented a paper on "Pruritus Ani et Vulvae." Discussed by Drs. Carl W. Laymon, Minneapolis; James Herbert Mitchell, Chicago; Claude C. Tucker, Wichita, Kan.; Clark W. Finnerud, Chicago; Hamilton Montgomery, Rochester, Minn.; J. L. Kobacker, Toledo, Ohio; Joseph Grindon Sr., St. Louis, and William Howard Hailey, Atlanta, Ga.

Drs. Udo J. Wile and Harry L. Arnold Jr., Ann Arbor, Mich., presented a paper on "The Senear-Usher Syndrome." Discussed by Drs. Francis E. Senear, Chicago; Hamilton Montgomery, Rochester, Minn.; S. William Becker, Chicago, and Harry L. Arnold Jr., Ann Arbor, Mich.

Dr. Leslie P. Barker, New York, read a paper on "Generalized Herpes Zoster." Discussed by Drs. Nelson Paul Anderson, Los Angeles; Joseph Grindon Jr., St. Louis, and Leslie P. Barker, New York.

Dr. Onis G. Hazel, Oklahoma City, read a paper on "Poikiloderma Atrophicans Vasculare." Discussed by Drs. Fred M. Jacob, Pittsburgh; Fred D. Weidman, Philadelphia, and Onis G. Hazel, Oklahoma City.

On motion by Dr. Francis E. Senear, Chicago, seconded by Fred D. Weidman, Philadelphia, a vote of thanks was extended by a rising vote to the local dermatologists for a pleasant and profitable meeting.

On motion by Dr. Joseph Grindon Sr., St. Louis, seconded by several members, a vote of thanks was extended to the chairman, vice chairman and secretary for the splendid way they conducted the meetings.

SECTION ON PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

WEDNESDAY, MAY 17—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. I. C. Riggin, Richmond, Va.

Dr. I. C. Riggin, Richmond, Va., read the chairman's address, entitled "Expansion of Functions and Responsibilities of Health Departments."

Dr. Louis F. Bishop Jr., New York, read a paper on "Traumatic Heart Disease with Particular Reference to Injury." Discussed by Drs. Ray W. Kissane, Columbus, Ohio, and Louis F. Bishop Jr., New York.

Dr. Joseph W. Mountin and Harold F. Dorn, Washington, D. C., presented a paper on "Some Peculiarities in the Geography of Cancer." Discussed by E. V. Cowdry, Ph.D., St. Louis, and Drs. J. N. Baker, Montgomery, Ala.; Frederick G. Murray, Cedar Rapids, Iowa; John A. Ferrell, New York; A. G. Henderson, Imboden, Ark., and Joseph W. Mountin, Washington, D. C.

On motion made by Dr. Leopold Brahdy, New York, and seconded by Dr. John A. Ferrell, New York, the chairman was authorized to appoint a committee to study with the executive committee a tentative draft of Suggested School Health Policies and make a report to be forwarded to Dr. W. W. Bauer, director of the Bureau of Health Education of the American Medical Association. The chairman appointed the executive committee members Drs. L. D. Bristol, New York, Robert T. Legge, Berkeley, Calif.; and I. C. Riggin, Richmond, Va., and, in addition, Drs. Harold S. Diehl, Minneapolis; John A. Ferrell, New York, and J. N. Baker, Montgomery, Ala.

Dr. John H. Powers, Cooperstown, N. Y., read a paper on "The Hazards of Farming." Discussed by Drs. F. P. Helm, Topeka, Kan.; A. Girard Cranch, New York; Leopold Brahdy,

New York; Joseph W. Mountin, Washington, D. C.; J. N. Baker, Montgomery, Ala., and John H. Powers, Cooperstown, N. Y.

Drs. Mark A. Glaser and Frederick P. Shafer, Los Angeles, presented a paper on "Depressed Skull Fractures." Discussed by Drs. John H. Powers, Cooperstown, N. Y., and Mark A. Glaser, Los Angeles.

THURSDAY, MAY 18—MORNING

Dr. Julien E. Benjamin, Cincinnati, read a paper on "A Study of the Pneumonias with Reference to Overcrowding and Cross Infection." Discussed by Drs. Jesse G. M. Bullowa, New York; Emil Bogen, Olive View, Calif., and Julien E. Benjamin, Cincinnati.

Dr. Leopold Brahdy, New York, read a paper on "Tuberculosis Among Hospital Personnel." Discussed by Drs. C. D. Selby, Detroit; Harold S. Diehl, Minneapolis; Camille Kereszturi, New York, and Leopold Brahdy, New York.

The chairman presented the following report made by the committee appointed to consider the Suggested School Health Policies tentative draft:

This statement, to delineate the responsibilities of school health programs and to relate the school health program to the health programs or health activities of other groups, is hereby approved in general as a distinctly worthwhile set of principles.

We would like to recommend consideration of the following points:

(*a*) On page 7 we would suggest that noise be mentioned as a disturbing factor in school lunch rooms.

(*b*) On page 16 we question the statement that it is undesirable to conduct immunization clinics in schools. Oftentimes this is the only way it can be done.

(*c*) On page 19 we question the diseases mentioned as not being prevented by "healthful living." If we understand the meaning of "healthful living," we suggest a modification here.

(*d*) On page 20 we suggest the words "should prepare" in place of "are preparing" (as marked).

(*e*) On page 27 we suggest that thoroughness of pupil examinations be emphasized rather than frequency of examinations.

(*f*) On page 28 we suggest that investigation of cases entitled to clinic service for their children be not restricted to a "medical social worker."

(*g*) Lastly, we would recommend that the value of cumulative individual health records of school children be stressed and an outline of principles involved be described.

Respectfully submitted.

JOHN. A. FERRELL.
J. N. BAKER.
I. C. RIGGIN.
L. D. BRISTOL.
H. S. DIEHL.
W. A. SAWYER.

On motion by Dr. John L. Rice, New York, seconded by Dr. J. N. Baker, Montgomery, Ala., it was voted that the report be approved.

The report of the delegate was made by Dr. Stanley H. Osborn, Hartford, Conn.

On motion by Dr. Harold S. Diehl, Minneapolis, seconded by Dr. John A. Ferrell, New York, it was voted that the action taken last year relative to the term of service of the delegate to the House of Delegates be rescinded.

Dr. Robert E. Plunkett, Albany, N. Y., read a paper on "Tuberculosis Control." Discussed by Drs. Leverett D. Bristol, New York; Earl F. Morris, Hays, Kan.; John L. Rice, New York, and Robert E. Plunkett, Albany, N. Y.

Drs. Harold T. Hyman, Louis Chargin, John L. Rice and William Leifer, New York, presented a paper on "The Intravenous Drip Method of Therapy Applied to Syphilis." Discussed by Drs. R. A. Vonderlehr, Washington, D. C.; George V. Kulchar, San Francisco; Louis Chargin, New York, and Earl F. Morris, Hays, Kan.

Dr. Samuel Goldblatt, Cincinnati, read a paper on "The Relationship of Syphilis to Tuberculosis." Discussed by Drs. Charles C. Dennie, Kansas City, Mo.; Emil Bogen, Olive View, Calif., and Samuel Goldblatt, Cincinnati.

FRIDAY, MAY 19—MORNING

The following officers were elected: chairman, Dr. Harold S. Diehl, Minneapolis; vice chairman, Dr. Clarence D. Selby, Detroit; secretary, Dr. W. A. Sawyer, Rochester, N. Y.; executive committee: Dr. Robert T. Legge, Berkeley, Calif.; Dr. I. C. Riggin, Richmond, Va., and Dr. Harold S. Diehl, Minneapolis; delegate, Dr. Stanley H. Osborn, Hartford, Conn.; alternate, Dr. R. R. Sayers, Washington, D. C.; chairman, Committee on Section Exhibit, Dr. P. A. Davis, Akron, Ohio.

On motion by Dr. John A. Ferrell, New York, seconded by Dr. C. M. Peterson, Chicago, it was voted that the incoming chairman be requested to appoint a committee of two or four to make a study of the section and its activities and of the conditions responsible for the small attendance at the section sessions, the committee to seek the aid of the Chicago office in comparing the activities of the section with other sections and securing cooperation in formulating a program that will bring a creditable attendance to the section meetings.

Dr. Edward Matzger, San Francisco, read a paper on "Industrial Importance of Allergic Diseases to the Southern Pacific Railroad Company." No discussion.

Dr. C. C. Burlingame, Hartford, Conn., read a paper on "Hard Facts About Psychiatry." Discussed by Drs. W. A. Sawyer, Rochester, N. Y.; John A. Ferrell, New York, and C. C. Burlingame, Hartford, Conn.

Dr. P. A. Davis, Akron, Ohio, read a paper on "Present Status of Benzene." Discussed by Drs. A. Girard Cranch, New York; Louis Schwartz, New York, and P. A. Davis, Akron, Ohio.

Dr. Paul A. Neal, Washington, D. C., read a paper on "Dermatitis Among Plate Printers." Discussed by Drs. Louis Schwartz, New York, and Paul A. Neal, Washington, D. C.

Dr. R. V. Ellis, Minneapolis, read a paper on "Pollinosis as a Problem in Preventive Medicine." Discussed by Drs. John M. Sheldon, Ann Arbor, Mich.; Louis Schwartz, New York; John A. Ferrell, New York, and R. V. Ellis, Minneapolis.

SECTION ON UROLOGY

WEDNESDAY, MAY 17—MORNING

The meeting was called to order at 9:05 by the chairman, Dr. William P. Herbst, Washington, D. C.

Secretary Vincent J. O'Conor, Chicago, read a report from Dr. Alfred I. Folsom, chairman of the American Board of Urology.

The following papers were read as a symposium on "Injuries of the Urinary Tract":

Dr. Franklin Farman, Los Angeles: "Diagnostic and Operative Factors in Traumatic Rupture of the Kidney."

Dr. George C. Prather, Boston: "Clinical Observations Regarding Traumatic Conditions of the Kidney."

Drs. Carl F. Rusche and S. K. Bacon, Los Angeles: "Injuries of the Ureter."

These three papers were discussed by Drs. Harry C. Rolnick, Chicago; James C. Sargent, Milwaukee; Charles Y. Bidgood, Hartford, Conn.; John E. Heslin, Albany, N. Y.; Otto J. Wilhelmi, St. Louis; Franklin Farman, Los Angeles, and Carl F. Rausche, Los Angeles.

Dr. E. J. McCague, Pittsburgh: "Intraperitoneal and Extraperitoneal Rupture of the Urinary Bladder."

Dr. William R. Hornaday, Des Moines, Iowa: "Care of Traumatic Injuries of the Male Urethra."

These two papers were discussed by Drs. A. J. Scholl, Los Angeles; Edward Lester Merritt, Fall River, Mass., and William R. Hornaday, Des Moines, Iowa.

Dr. George H. Ewell, Madison, Wis.: "Traumatic 'Epididymo-Orchitis.'" Discussed by Drs. Miley B. Wesson, San Francisco; Edward Cathcart, Detroit; Leon Herman, Philadelphia, and George H. Ewell, Madison, Wis.

THURSDAY, MAY 18—MORNING

Dr. Roy E. Brackin, Kenilworth, Ill., read a paper on "A New Method of Uretero-Intestinal Anastomosis with Utilization of Peritoneum." Discussed by Drs. Waltman Walters, Rochester, Minn., and Roy E. Brackin, Kenilworth, Ill.

Dr. James T. Priestley, Rochester, Minn., read a paper on "Survival Following Removal of Malignant Renal Neoplasms." Discussed by Dr. William P. Herbst, Washington, D. C.

Dr. William P. Herbst, Washington, D. C., read the chairman's address, entitled "Renal Tuberculosis as a Community Problem."

Dr. Charles M. McKenna, Chicago, read a paper on "Hypospadias (in the Male): The Operative Technic for the Correction of Penile Deformity and Reconstruction of the Urethra." Discussed by Drs. Clinton K. Smith, Kansas City, Mo.; Vincent J. O'Conor, Chicago; Vilray P. Blair, St. Louis; Frederic E. B. Foley, St. Paul, and Charles M. McKenna, Chicago.

Dr. Max L. Rosenheim of London, England, addressed the section.

Dr. William F. Lower, Cleveland, read a paper on "Clinical Aspects of the Endocrine Functions of the Testes in Man."

Dr. James F. McCahey, Philadelphia, read a paper on "The Endocrine Function of the Testis."

These two papers were discussed by Drs. S. A. Vest, Baltimore; Walter M. Kearns, Milwaukee; William E. Lower, Cleveland, and James F. McCahey, Philadelphia.

FRIDAY, MAY 19—MORNING

The following officers were elected: chairman, Dr. Frederic E. B. Foley, St. Paul; vice chairman, Dr. Thomas J. Kirwin, New York; secretary, Dr. Vincent J. O'Conor, Chicago; delegate, Dr. H. Carey Bumpus, Pasadena, Calif.; alternate, Dr. George C. Prather, Boston.

Drs. Eli A. Miller, Denver, and Mischa J. Lustok, Spivak, Colo., presented a paper on "Genital Tuberculosis." Discussed by Drs. Homer C. Hamer, Indianapolis, and Mischa J. Lustok, Spivak, Colo.

The following papers were read as a symposium on "Urinary Calculi":

Dr. Charles C. Higgins, Cleveland: "Factors in Recurrence of Renal Calculi"

Dr. Rubin Flocks, Iowa City: "Calcium and Phosphorus Excretion in the Urine of Patients with Renal or Ureteral Calculi."

Drs. Herman L. Kretschmer and Ralph C. Brown, Chicago: "Do Alkalis Used in the Treatment of Peptic Ulcer Cause Kidney Stones?"

These three papers were discussed by Drs. John Morrissey, New York; Roy J. Holmes, Miami, Fla.; Charles C. Higgins, Cleveland, and Ralph C. Brown, Chicago.

Dr. Gershom J. Thompson, Rochester, Minn., read a paper on "The Treatment of Ureteral Calculus with Particular Reference to Transurethral Manipulation."

Dr. John Duff, New York, read a paper on "Ureteral Meatotomy: Its Significance and a New Technic."

These two papers were discussed by Drs. E. P. Alyea, Durham, N. C.; H. Carey Bumpus, Pasadena, Calif.; Frederic E. B. Foley, St. Paul, and Vincent J. O'Conor, Chicago.

The section expressed its appreciation to the St. Louis Urological Society for its hospitality.

SECTION ON ORTHOPEDIC SURGERY

WEDNESDAY, MAY 17—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. Oscar L. Miller, Charlotte, N. C.

Dr. E. J. Berkheiser, Chicago, read a paper on "Excision of Patella in Cases of Hypertrophic Arthritis." Discussed by Drs. A. H. Meyer, Memphis, Tenn.; Jacob Kulowski, St. Joseph, Mo.; Frank Murphy, Chicago; J. Albert Key, St. Louis; John P. Stump, New York; Garrett Pipkin, Kansas City, Mo., and E. J. Berkheiser, Chicago.

Dr. Francis M. McKeever, Los Angeles, read a paper on "Tuberculosis of the Knee in Infancy and Childhood." Discussed by Drs. W. P. Blount, Milwaukee; R. B. Osgood, Boston; Halford Hallock, New York; Frank R. Ober, Boston, and Francis M. McKeever, Los Angeles.

Drs. Edward L. Compere, Samuel W. Banks and William N. Krigsten, Chicago, presented a paper on "Regeneration of the Growth Epiphyses of Long Bones." Discussed by Drs. Willis C. Campbell, Memphis, Tenn.; J. Albert Key, St. Louis, and William N. Krigsten, Chicago.

Drs. Fremont A. Chandler and John R. Norcross, Chicago, presented a paper on "Sympathicoblastoma: A Report of Four Cases." Discussed by Drs. Frank R. Ober, Boston; G. K. Carpenter, Nashville, Tenn., and Fremont A. Chandler, Chicago.

Dr. Willis C. Campbell, Memphis, Tenn., delegate to the House, presented a report on an action of the House of Delegates and received a vote of support of his action from the section.

Dr. Joseph A. Freiberg, Cincinnati, read a paper on "Low Back Pain: Correlation of the Signs and Symptoms of the Various Noninfectious Lesions." Discussed by Drs. Philip Lewin, Chicago; G. C. Battalora, New Orleans; Earl D. McBride, Oklahoma City, and Joseph A. Freiberg, Cincinnati.

Drs. Carl E. Badgley and N. John Rowe Jr., Ann Arbor, Mich., presented a paper on "The Cook Fenestrated Jacket for Correction of Scoliosis." Discussed by Drs. C. H. Crego Jr., St. Louis; L. G. Howard, Boston; Earl D. McBride, Oklahoma City; Charles A. Stone, St. Louis; J. Albert Key, St. Louis, and Carl E. Badgley, Ann Arbor, Mich.

The following were appointed as a nominating committee; Dr. Robert D. Schrock, Omaha, chairman; Dr. L. G. Howard, Boston, and Dr. Francis M. McKeever, Los Angeles.

THURSDAY, MAY 18—MORNING

Dr. Halford Hallock, New York, read a paper on "Reconstructive and Stabilizing Surgery in the Treatment of Residual Suppurative Arthritis of the Hip Joint: A Study of Forty-Five Unselected Cases." Discussed by Drs. J. Albert Key, St. Louis; Frank D. Dickson, Kansas City, Mo.; Edwin W. Ryerson, Chicago, and Halford Hallock, New York.

Dr. Edwin W. Ryerson, Chicago, read a paper on "Excision of Scapula: Report of a Case Showing Excellent Functional Result." Discussed by Drs. W. B. Carrell, Dallas, Texas; J. Albert Key, St. Louis, and Edwin W. Ryerson, Chicago.

Drs. A. R. Shands Jr., Wilmington, Del., and Lenox D. Baker, Durham, N. C., presented a paper on "Acute Osteomyelitis with Staphylococcemia: A Clinical Report on the Use of Antitoxin in Its Treatment." Discussed by Drs. James B. Weaver, Kansas City, Mo.; Ben L. Schoolfield, Dallas, Texas, and Lenox D. Baker, Durham, N. C.

Dr. Oscar L. Miller, Charlotte, N. C., read the chairman's address, entitled "Simplified Internal Fixation of Inlay and Onlay Bone Grafts."

Drs. Ralph K. Ghormley and Robert D. Fairchild, Rochester, Minn., presented a paper on "Diagnosis and Treatment of Slipped Epiphyses." Discussed by Drs. Beckett Howorth, New York; Walter P. Blount, Milwaukee; W. B. Carrell, Dallas, Texas; Eugene M. Regen, Nashville, Tenn., and Ralph K. Ghormley, Rochester, Minn.

Dr. Rex L. Diveley, Kansas City, Mo. read a paper on "Imbalance of the Foot." Discussed by Drs. J. E. M. Thomson, Lincoln, Neb.; H. R. Bohlman, Baltimore; Willis C. Campbell, Memphis, Tenn.; Ben L. Schoolfield, Dallas, Texas; Oscar L. Miller, Charlotte, N. C., and Rex L. Diveley, Kansas City, Mo.

FRIDAY, MAY 19—MORNING

Drs. Vernon P. Thompson and John S. Stephens, Los Angeles, presented a paper on "Compression Reconstruction of Recent Intracapsular Femoral Neck Fractures: Internal Fixation by Universal Length Z Nail." Discussed by Drs. V. L. Hart, Minneapolis; F. W. Carruthers, Little Rock, Ark.; Joseph A. Freiberg, Cincinnati, and John S. Stephens, Los Angeles.

Dr. W. K. West, Oklahoma City, read a paper on "Severe Fractures of the Upper Ulna." Discussed by Drs. J. T. O'Ferrall, New Orleans; J. Albert Key, St. Louis; Walter Stuck, San Antonio, Texas; Charles A. Stone, St. Louis, and W. K. West, Oklahoma City.

Dr. Paul C. Colonna and Frederick H. vom Saal, Oklahoma City, presented a paper on "A Study of Amputations in the Lower Extremities." Discussed by Drs. R. G. Packard, Denver; James R. Elliott, Kansas City, Mo.; Ralph K. Ghormley, Rochester, Minn.; J. Albert Key, St. Louis; Lenox D. Baker, Durham, N. C.; Robert D. Schrock, Omaha; S. Perry Rogers, Chicago, and Frederick H. vom Saal, Oklahoma City.

The following officers were elected: chairman, R. V. Funsten, Charlottesville, Va.; vice chairman, J. Albert Key, St. Louis; secretary, Guy A. Caldwell, New Orleans; executive committee: John Dunlop, Pasadena, Calif., Oscar L. Miller, Charlotte, N. C., and Robert V. Funsten, Charlottesville, Va.; delegate, Willis C. Campbell, Memphis, Tenn.; alternate, James Archer O'Reilly, St. Louis; nominees to the American Board of Orthopedic Surgery, Fremont A. Chandler, Chicago, and Ralph K. Ghormley, Rochester, Minn.

Dr. Robert D. Schrock, Omaha, read a paper on "Sideswipe Fractures at the Elbow." Discussed by Drs. G. O. Eaton, Baltimore; R. C. Robertson, Chattanooga, Tenn.; Howard B. Shorbe, Oklahoma City, and Robert D. Schrock, Omaha.

Dr. Clay Ray Murray, New York, read a paper on "Primary Operative Reduction of Fractures of Long Bones as a Method of Choice: An Evaluation of Principles." Discussed by Drs. Paul B. Magnuson, Chicago; H. Earle Conwell, Birmingham, Ala.; M. L. Klinefelter, St. Louis; J. Albert Key, St. Louis; F. W. Carruthers, Little Rock, Ark., and Clay Ray Murray, New York.

Dr. L. D. Smith, Milwaukee, read a paper on "Treatment of Supracondylar Fractures of the Femur by Manipulation and Acute Flexion." Discussed by Drs. J. D. Wilson, Columbus, Ohio; Robert D. Schrock, Omaha, and L. D. Smith, Milwaukee.

SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY

WEDNESDAY, MAY 17—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. Descum C. McKenney, Buffalo.

The following papers were read as a symposium on "Aids to the Management of Peptic Ulcer":

Drs. A. L. Levin and Morris Shushan, New Orleans: "A Comparative Study of Methods Utilized to Determine the Presence of Ulceration in the Gastrointestinal Tract."

Drs. M. Hill Metz, Robert W. Lackey, P. E. Wigby, A. B. Small and C. O. Patterson, Dallas, Texas: "Peptic Ulcer Treated by Posterior Pituitary Preparations: Clinical and Experimental Observations."

Dr. Manfred Kraemer, Newark, N. J.: "The Use of Hydrated Trisilicate of Magnesium for Peptic Ulcer."

These three papers were discussed by Drs. Walter L. Palmer, Chicago; Maurice Feldman, Baltimore; Sidney A. Portis, Chicago; Henry A. Rafsky, New York; George M. Underwood, Dallas, Texas; A. L. Levin, New Orleans; M. Hill Metz, Dallas, Texas, and Manfred Kraemer, Newark, N. J.

Dr. Porter P. Vinson, Richmond, Va., read a paper on "The Management of Benign Strictures of the Esophagus." Discussed by Dr. John H. Fitzgibbon, Portland, Ore.

Drs. Frank H. Connell and Harry T. French, Hanover, N. H., presented a paper on "The Incidence and Results of Treatment in Subclinical Amebiasis." Discussed by Drs. James L. Borland, Jacksonville, Fla.; George B. Lake, Waukegan, Ill.; A. L. Levin, New Orleans; Walter L. Palmer, Chicago, and Frank H. Connell, Hanover, N. H.

The following papers were read as a symposium on "Systemic Conditions with Gastrointestinal Symptoms":

Drs. Lester M. Morrison and William A. Swalm, Philadelphia: "The Role of the Gastrointestinal Tract in the Production of Cardiac Symptoms."

Drs. Sidney A. Portis and Jacob Kasanin, Chicago: "Psychosomatic Factors Concerned in Diarrhea."

Dr. E. L. Tuohy, Duluth, Minn.: "Geriatrics: Its Relation to an Adequate Energy Producing and Protective Diet."

These three papers were discussed by Dr. Seale Harris, Birmingham, Ala.

THURSDAY, MAY 18—AFTERNOON

The following officers were elected: chairman, Dr. A. H. Aaron, Buffalo; vice chairman, Dr. Frank C. Yeomans, New York; secretary, Dr. J. Arnold Bargen, Rochester, Minn.; executive committee: Dr. Henry L. Bockus, Philadelphia, Dr. Descum C. McKenney, Buffalo, and Dr. A. H. Aaron, Buffalo; delegate, Dr. Curtice Rosser, Dallas, Texas; alternate, Dr. L. A. Buie, Rochester, Minn.; chairman, Committee on Section Exhibit, Dr. Sara M. Jordan, Boston.

The following papers were read as a symposium on "Therapeutic Advances in Disease of the Ileocecal Region":

Drs. J. Shelton Horsley, John S. Horsley Jr. and Guy W. Horsley, Richmond, Va.: "Appendicitis: Newer Methods of Treatment."

Drs. Thew Wright, A. H. Aaron, J. Sutton Regan and Elmer Milch, Buffalo: "The Management of Patients with Diffuse Peritonitis Caused by Perforated Appendicitis."

Dr. Benjamin M. Bernstein, Brooklyn: "Ileocecal Spasm: The Cause for the Appendicular Syndrome."

These three papers were discussed by Drs. Frederick A. Coller, Ann Arbor, Mich.; Sidney A. Portis, Chicago; Niels C. Klendshoj, Buffalo; Henry A. Rafsky, New York; Sara M. Jordan, Boston; M. Pinson Neal, Columbia, Mo.; J. Shelton Horsley, Richmond, Va.; A. H. Aaron, Buffalo, and Benjamin M. Bernstein, Brooklyn.

The following papers were read as a symposium on "Studies on Cancer at Different Ages":

Dr. Andrew B. Rivers, Rochester, Minn.: "The Importance of Carcinoma as a Cause of Indigestion."

Drs. Curtice Rosser and J. G. Kerr, Dallas, Texas: "Cancer of the Rectum in Young Persons."

These two papers were discussed by Drs. Burrill B. Crohn, New York; Henry A. Rafsky, New York; John M. Blackford, Seattle; Louis J. Hirschman, Detroit; Andrew B. Rivers, Rochester, Minn., and Curtice Rosser, Dallas, Texas.

The following papers were read as a symposium on "Important Points in the Management of Neoplasms of the Large Intestine":

Drs. Neil W. Swinton and Shields Warren, Boston: "Polyps of the Colon and Rectum and Their Relation to Malignancy."

Drs. Jerome M. Lynch and G. Johnson Hamilton, New York: "The Lynch versus the Miles Operation."

Dr. W. Wayne Babcock, Philadelphia: "The Advantages of Perineal Over Abdominal Colostomy with Technic for Transferring the Abdominal Opening to the Perineum."

These three papers were discussed by Drs. Claude F. Dixon, Rochester, Minn.; William J. Martin Jr., Louisville, Ky.; Louis J. Hirschman, Detroit; Frank H. Lahey, Boston; Neil W. Swinton, Boston; Jerome M. Lynch, New York, and W. Wayne Babcock, Philadelphia.

FRIDAY, MAY 19—AFTERNOON

A joint meeting was held with the Section on Radiology. The proceedings are reported in the minutes of that section.

SECTION ON RADIOLOGY

WEDNESDAY, MAY 17—AFTERNOON

The meeting was called to order by the chairman, Dr. R. G. Taylor, Los Angeles.

The chairman appointed Dr. Edward L. Jenkinson, Chicago, to serve on the executive committee in the absence of Dr. B. R. Kirklin, Rochester, Minn.

Drs. W. A. Altemeier and H. C. Jones, Detroit, presented a paper on "Experimental Peritonitis: Its Prevention by Roentgen Therapy." Discussed by Dr. J. P. Pratt, Detroit.

Drs. George P. Robb and Israel Steinberg, New York, presented a paper on "Visualization of the Chambers of the Heart, the Pulmonary Circulation and the Great Blood Vessels in Man: Further Observations."

Dr. R. G. Taylor, Los Angeles, read the chairman's address, entitled "Anomalies of the Sacrolumbar Articulations."

Drs. Robert I. Walter, Arnold L. Bachman and William Harris, New York, presented a paper on "The Treatment of Carcinoma of the Ovary." Discussed by Dr. D. Y. Keith, Louisville, Ky.

Drs. Edward L. Jenkinson and Arthur F. Hunter, Chicago, presented a paper on "Bronchiogenic Carcinoma: A Diagnostic Enigma." Discussed by Drs. LeRoy Sante, St. Louis; Ross Golden, New York, and R. G. Taylor, Los Angeles.

Drs. J. Fletcher Lutz and Lewis C. Pusch, York, Pa., presented a paper on "Angio-Endothelioma of Bone." Discussed by Drs. Charles F. Geschickter, Baltimore, and John T. Murphy, Toledo, Ohio.

THURSDAY, MAY 17—AFTERNOON

The following officers were elected: chairman, Dr. Merrill C. Sosman, Boston; vice chairman, Dr. Raymond Behler, Indianapolis; secretary, Dr. John T. Murphy, Toledo, Ohio; delegate, Dr. Edward H. Skinner, Kansas City, Mo.; alternate, Dr. Eugene P. Pendergrass, Philadelphia; representative to the Board of Radiology, John W. Pierson, Baltimore.

Drs. R. Glen Spurling and F. Keith Bradford, Louisville, Ky., presented a paper on "Neurologic Aspects of Intervertebral Disk Protrusions."

Drs. W. Edward Chamberlain and Barton K. Young, Philadelphia, read a paper on "The Diagnosis of Intervertebral Disk Protrusions by Intraspinal Injection of Air."

Dr. John D. Camp, Rochester, Minn., read a paper on "The Roentgenologic Diagnosis of Intraspinal Protrusion of the Intervertebral Disks by Means of Radiopaque Oil."

Dr. J. Grafton Love, Rochester, Minn., read a paper on "Protruded Intervertebral Disks, with a Note Regarding Hypertrophy of Ligamenta Flava."

These four papers were discussed by Drs. William Jason Mixter, Boston; Claude Moore, Washington, D. C.; L. H. Garland, San Francisco, and J. Daniel Willems, Chicago.

Dr. William A. Nosik, Cleveland, co-author with Dr. B. H. Nichols, Cleveland, gave a brief outline of the paper on "Myelography with the Use of Thorium Dioxide Sol as a Contrast Medium." This paper was not read, owing to Dr. Nichols' absence.

FRIDAY, MAY 19—AFTERNOON

A joint meeting was held with the Section on Gastro-Enterology and Proctology.

The following papers were read as a symposium on "The Small Intestine: Anatomic, Roentgenologic, Pathologic and Clinical Considerations":

Dr. George W. Chamberlin, Philadelphia: "The Roentgen Anatomy of the Small Intestine."

Dr. Harry M. Weber, Rochester, Minn.: "The Roentgenologic Manifestations of the Non-Neoplastic Lesions of the Small Intestine."

Drs. David Adlersberg and Michael Weingarten, New York: "The Small Intestine in Nutritional Deficiency."

Dr. E. C. Rosenow, Rochester, Minn.: "Epidemic Enteritis: Etiology and Relation to Other Infections of the Small Intestine."

Dr. Everett D. Kiefer, Boston: "Clinical Aspects of Chronic Disorders of Small Intestine."

These five papers were discussed by Drs. Kendall A. Elsom, Philadelphia; Sara M. Jordan, Boston; Ross Golden, New York; W. Edward Chamberlain, Philadelphia; Theodore L. Althausen, San Francisco; John T. Murphy, Toledo, Ohio; George W. Chamberlin, Philadelphia; Harry M. Weber, Rochester, Minn.; David Adlersberg, New York, and Everett D. Kiefer, Boston.

SECTION ON MISCELLANEOUS TOPICS

Session on Anesthesia

WEDNESDAY, MAY 17—MORNING

The meeting was called to order by the chairman, Dr. Ralph M. Waters, Madison, Wis.

Dr. Paul W. Searles, Buffalo, read a paper on "The Effect of Certain Anesthetics on the Blood." Discussed by Dr. Charles J. Betlach, Chicago.

Dr. E. A. Rovenstine, New York, read a paper on "The Principles of Inhalation Anesthesia for Thoracic Surgery." Discussed by Drs. Joseph W. Gale, Madison, Wis., and Arno Benedict Luckhardt, Chicago.

Dr. Philip D. Woodbridge, Boston, read a paper on "Prevention of Ignition of Anesthetic Gases by Static Spark." Discussed by Drs. Everett A. Tyler, Philadelphia; Ralph M. Waters, Madison, Wis.; Arno Benedict Luckhardt, Chicago, and Prof. J. W. Horton, Boston.

Dr. Paul M. Wood, New York, read a paper on "Trichlorethanol: A Preliminary Clinical Report." Discussed by Dr. P. K. Knoefel, Louisville, Ky.

Drs. Henry S. Ruth, Merion Station, Pa., and Ralph M. Tovell, Hartford, Conn., presented a paper on "Intravenous Pentothal." Discussed by Drs. George J. Thomas, Pittsburgh, and Ralph Thomas Knight, Minneapolis.

Dr. M. H. Seevers, Madison, Wis., read a paper on "Respiratory Alkalosis During Anesthesia: An Experimental Study in Man." Discussed by Dr. Henry K. Beecher, Boston.

Dr. John H. Evans, Buffalo, read a paper on "Oxygen Tolerance versus Oxygen Dosage." Discussed by Dr. F. A. D. Alexander, Albany, N. Y.

Drs. P. P. Volpitto, R. A. Woodbury and W. F. Hamilton, Augusta, Ga., presented a paper on "Direct Arterial and Venous Pressure Measurements During Clinical Anesthesia." Discussed by Dr. John S. Lundy, Rochester, Minn.

THE SCIENTIFIC EXHIBIT

The Scientific Exhibit at the St. Louis session was characterized by the large amount of teaching material for the physician in general practice. There were 226 exhibits in all, 160 of which were presented under the auspices of the various sections, eighteen in the exhibit symposium on heart disease, and forty by state and national organizations. There were two special exhibits sponsored by the Board of Trustees, and six groups of motion pictures in connection with the various sections.

The special exhibit on anesthesia was presented for the third time under the auspices of a committee composed of Ralph M. Waters, chairman, Madison, Wis.; John S. Lundy, Rochester, Minn.; Henry S. Ruth, Philadelphia, and Philip D. Woodbridge, Boston. Demonstrations throughout the week were presented by a competent corps of anesthetists and were largely attended. A pamphlet describing the exhibit was distributed. There was a special motion picture program in an area adjoining the exhibits.

The special exhibit on fractures was presented under the auspices of a committee composed of Kellogg Speed, chairman, Chicago; Frank D. Dickson, Kansas City, Mo., and Walter Estell Lee, Philadelphia. A carefully selected group of surgeons from various parts of the country assisted with the demonstrations and a pamphlet describing the exhibit was distributed.

Other features of the St. Louis session included an exhibit symposium on heart disease in conjunction with the American Heart Association; an exhibit symposium on graduate medical education; groups of exhibits on cancer and pneumonia, and motion pictures shown under the auspices of the different sections in spaces adjoining their exhibits.

Thirty-one papers read before the various sections of the Scientific Assembly were correlated with the exhibits in the Scientific Exhibit.

The following physicians served as representatives to the Scientific Exhibit from the different sections of the Scientific Assembly:

Section on Practice of Medicine, Fred M. Smith, Iowa City.

Section on Surgery, General and Abdominal, Grover C. Penberthy, Detroit.

Section on Obstetrics and Gynecology, H. Close Hesseltine, Chicago.

Section on Ophthalmology, Georgiana Dvorak-Theobald, Oak Park, Ill.

Section on Laryngology, Otology and Rhinology, Lee Wallace Dean Jr., St. Louis.

Section on Pediatrics, Arthur F. Abt, Chicago.

Section on Pharmacology and Therapeutics, Wallace M. Yater, Washington, D. C.

Section on Pathology and Physiology, F. W. Konzelmann, Philadelphia.

Section on Nervous and Mental Diseases, Roland P. Mackay, Chicago.

Section on Dermatology and Syphilology, Hamilton Montgomery, Rochester, Minn.

Section on Preventive and Industrial Medicine and Public Health, Paul A. Davis, Akron, Ohio.

Section on Urology, R. S. Ferguson, New York.

Section on Orthopedic Surgery, F. A. Jostes, St. Louis.

Section on Gastro-Enterology and Proctology, Sara M. Jordan, Boston.

Section on Radiology, E. E. Downs (deceased), Woodbury, N. J.

REPORT OF THE COMMITTEE ON AWARDS

The Committee on Awards made the following report:

GROUP I

(Awards in Group I are made for exhibits of individual investigation, which are judged on the basis of originality and excellence of presentation.)

The GOLD MEDAL to George W. Thorn, R. Palmer Howard, Kendall Emerson Jr. and Warfield M. Firor, Johns Hopkins University and Hospital, Baltimore, for exhibit illustrating studies on desoxycorticosterone (a synthetic adrenal cortical substance).

The SILVER MEDAL to George P. Robb and Israel Steinberg, New York, for exhibit illustrating visualization of the chambers of the heart, the pulmonary circulation and the great blood vessels in man.

The BRONZE MEDAL to J. F. Fulton and Margaret A. Kennard, Yale University, New Haven, Conn., and Carlyle F. Jacobson, Washington University, St. Louis, for exhibit illustrating functions of the frontal lobe with particular reference to the motor and premotor areas (areas 4 and 6 of Brodmann).

CERTIFICATES OF MERIT, Group I, are awarded to the following (alphabetically arranged):

Graham Asher, George Walker and Frank Hoecker, University of Kansas, Kansas City, for exhibit illustrating the lag-screen electrocardiograph for the instant and continuous viewing of electrocardiograms.

Hugh R. Butt and Jesse L. Bollman, Mayo Clinic, Rochester, Minn., for exhibit illustrating vitamin K in the control of hemorrhage in jaundice.

A. Louis Dippel and Webster H. Brown, Johns Hopkins Hospital, Baltimore, for exhibit illustrating roentgen visualization of the placenta in placenta praevia and other conditions.

GROUP II

(Awards in Group II are made for exhibits which do not exemplify purely experimental studies and which are judged on the basis of excellence of presentation.)

The GOLD MEDAL to Elmer L. DeGowin, John E. Harris and E. D. Plass, State University of Iowa, University Hospitals, Iowa City, for exhibit illustrating the preservation of blood for transfusion.

The SILVER MEDAL to Philip Lewin, Chicago, for exhibit illustrating backache and sciatica.

The BRONZE MEDAL to Morris Moore, Barnard Free Skin and Cancer Hospital, St. Louis, for exhibit illustrating mycotic infections of man.

CERTIFICATES OF MERIT, Group II, are awarded to the following (alphabetically arranged):

Bert R. Boone, United States Public Health Service, Washington, D. C., for exhibit illustrating stethography in school children.

R. H. Jackson, J. W. Sisk and A. S. Jackson, Jackson Clinic, Madison, Wis., for exhibit illustrating diseases of the gallbladder ducts and liver.

Isaac Schour and H. G. Poncher, University of Illinois College of Dentistry and College of Medicine, Chicago, for exhibit illustrating calcium metabolism and teeth.

HONORABLE MENTION

In addition, the following exhibits are deemed worthy of Honorable Mention (alphabetically arranged):

Walter M. Boothby, C. W. Mayo, W. R. Lovelace II and A. H. Bulbulian, Rochester, Minn., for exhibit illustrating the use of oxygen in medicine, surgery and aviation; historical development; a new method of administration.

Robert Elman, Charles L. Hoagland, L. H. Hemplemann Jr. and Wilson G. Brown, Washington University School of Medicine, St. Louis, for exhibit illustrating acute pancreatic disease.

J. R. Lindsay, University of Chicago, Chicago, for exhibit illustrating suppuration in the petrous pyramid; pneumatization of the pyramid; histopathology of suppuration; x-ray demonstration.

Irwin Schulz, W. P. Blount, Charles Fidler, G. William Fox, Robert Montgomery, Arthur A. Schaefer, A. C. Schmidt, H. C. Schumm and Stanley J. Seeger, Milwaukee Children's Hospital, Milwaukee, for exhibit illustrating fractures in children; principles of treatment.

Bedford Shelmire and H. L. Graham, Dallas, Texas, for exhibit illustrating survey of common weeds causing contact eczema; patch testing with their oils.

SPECIAL MENTION

Special mention is made of the following exhibits (alphabetically arranged):

W. F. Braasch, J. L. Crenshaw and T. L. Pool, Mayo Foundation, Rochester, Minn., for exhibit illustrating recent advances in urologic diagnostic methods.

V. S. Counseller and J. T. Priestley, Mayo Foundation, Rochester, Minn., for exhibit illustrating surgery of the genito-urinary tract.

Elliott P. Joslin and Howard F. Root, Boston, with Louis I. Dublin and Herbert H. Marks, New York, for exhibit illustrating the current diabetes situation. (Dr. Joslin has previously received a medal in the Scientific Exhibit for his work on diabetes.)

Robert E. Schlueter and Ethel A. Washburn, St. Louis, for exhibit illustrating the medical history of St. Louis.

G. J. Thompson, E. N. Cook, J. L. Emmett, Mayo Foundation, Rochester, Minn., for exhibit illustrating transurethral surgery.

EDUCATIONAL CLASSIFICATION

A Special Certificate of Merit is awarded to the American College of Surgeons, Chicago, for its exhibit on cancer clinics.

Special Mention is made of the cooperative exhibit on pneumonia by the Northwestern University Medical School, University of Chicago Department of Medicine, and the Illinois State Department of Public Health.

SUBSIDIZED EXHIBITS

The Committee on Awards commends highly the special exhibits on anesthesia and fractures sponsored by the American Medical Association.

COMMENTS

The Committee believes that the appointment of carefully selected section exhibit representatives should be continued in order to secure proper correlation of the Scientific Exhibit with the Scientific Assembly.

It is the opinion of the Committee that the American Medical Association is greatly indebted to the Committee on Scientific Exhibit of the Board of Trustees, to the Advisory Committee, and to Dr. Thomas G. Hull, Director of the Scientific Exhibit. The Committee cannot commend too highly the arrangements, the efficient management, the stimulating instructiveness, practical as well as scientific, of the Exhibit.

LUDVIG HEKTOEN, Washington, D. C., Chairman.
VINCENT W. ARCHER, University, Va.
FRANCIS G. BLAKE, New Haven, Conn.
URBAN MAES, New Orleans.
FRED D. WEIDMAN, Philadelphia.

HOSPITALS AND MEDICAL CARE IN MISSISSIPPI

PREPARED BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

The state of Mississippi was selected by the Council on Medical Education and Hospitals for a complete study of hospitals and medical facilities. The procedure involved personal visits of inspection by members of the Council's staff to all the hospitals, registered and unregistered. The state health department and a number of county health departments lent their cooperation in supplying data for the survey. The number of hospitals, related institutions and unclassified facilities inspected for the survey totaled 117.

Without exception the superintendents and medical directors gave their wholehearted cooperation. The hospital inspections consisted of examination of the staff organization, plant, equipment and clinical records, and a review of the hospital administration and finances. Statistical data were requested concerning types of service, classification of admissions, surgery, laboratory work, personnel, areas served, and so on. Individual reports were prepared for each hospital by the inspectors. These data and other material already in the Council's files form the basis for this report.

The splendid cooperation of the hospital superintendents, the state and county health departments and the Mississippi State Hospital Association is gratefully acknowledged.

METHOD OF SURVEY

The number of registered hospitals in Mississippi according to Hospital Service in the United States for 1939 was seventy-five. This publication was based on material gathered by questionnaire for the year ended Sept. 30, 1938. At that time a number of Mississippi hospitals were under consideration for registration and others have applied since.

The Mississippi survey gave the Council an opportunity to investigate first hand the hospitals under consideration for registration. The figures presented throughout this report will represent for the most part the calendar year of 1938. As twenty-three hospitals were found to be eligible for registration following the survey, the data presented in the analysis will deal with a total[1] of 100 hospitals, including those already registered and those awaiting formal action by the Council. In addition there are twenty-two ethical unclassified facilities, having a total of approximately 225 beds, which do not conform to the requirements for registration and are not included in the statistics of this survey.

It should be understood that the increase of twenty-three[1] hospitals to the present registered group does not represent an abrupt rise in hospital facilities in Mississippi during the year 1938. Applications of several hospitals have been pending for more than a year and a number of hospitals for which information had not been received for a period of years were inspected and have now agreed to supply the Council with information annually. A few small hospitals were found concerning which the Council had no knowledge whatever. With this in mind the apparent sudden rise in the number of hospitals, the number of beds, patients admitted, average census, and the like, may be properly evaluated.

TABLE 1.—*All Mississippi Hospital Facilities, 1931-1938*

Year	Hospitals	Beds	Bassinets	Patients Admitted	Average Census
1931	77	8,007	325	54,031	5,997
1932	75	8,121	320	57,367	5,967
1933	75	8,119	315	50,243	5,637
1934	76	7,934	304	49,692	5,717
1935	77	8,040	306	55,530	5,789
1936	73	8,512	323	65,079	6,102
1937	74	8,870	339	74,823	6,573
1938	100	9,337	402	76,647	7,139

1. In addition to seventy-four registered in 1937, one was registered in 1938; two were registered and listed following close of compilations for Hospital Service in the United States March 11, 1939. Twenty-three are recommended for registration as a result of this survey.

TABLE 2.—*General Hospital Facilities in Mississippi, 1931-1938*

Year	Hospitals	Beds	Bassinets	Patients Admitted	Average Census
1931	65	2,976	309	49,749	1,283
1932	64	2,794	308	53,224	1,148
1933	65	2,823	309	47,166	961
1934	66	2,940	298	46,645	1,071
1935	67	2,961	304	53,007	1,205
1936	64	2,888	323	61,258	1,312
1937	63	2,818	339	70,557	1,411
1938	88	3,112	402	72,442	1,655

GROWTH OF HOSPITAL FACILITIES

The number of beds increased from 8,870 in 1937 to 9,337 in 1939, an increase of 5.3 per cent.

The hospitals investigated which were not registered but were found to be eligible included twenty-one general hospitals and two small tuberculosis hospitals, thus adding to those previously registered 234 general beds for white patients and ninety-four general beds for Negroes, or a total of 328 general beds and forty-eight tuberculosis beds.

TABLE 3.—*Hospital Facilities by Control, 1934-1938*

	Hospitals		Beds		Bassinets		Patients Admitted		Average Census	
	1934	1938	1934	1938	1934	1938	1934	1938	1934	1938
Federal	3	3	833	1,030	..	7	2,019	3,061	708	984
State	12	11	4,804	5,619	34	33	11,573	13,077	4,255	4,897
County	2	5	50	122	6	9	704	1,632	18	63
City	1	2	22	40	3	5	201	599	3	14
City-county	1	2	35	75	6	10	396	1,476	10	43
Total governmental	19	23	5,744	6,886	49	64	14,893	19,845	4,994	6,001
Church	2	2	160	213	18	24	4,387	6,305	102	118
Fraternal	1	..	12	...	..	..	50	.....	5	...
Associations and restricted corporations	17	28	795	1,111	83	154	10,609	27,566	230	563
Total nonprofit	20	30	967	1,324	101	178	15,046	33,871	337	681
Individual and partnership	27	42	811	988	113	140	13,455	19,913	261	404
Corporations (unrestricted as to profit)	10	5	412	139	41	20	6,298	3,018	125	53
Total proprietary	37	47	1,223	1,127	154	160	19,753	22,931	386	457
Total nongovernmental	57	77	2,190	2,451	255	338	34,799	56,802	723	1,138
Grand Total	76	100	7,934	9,337	304	402	49,692	76,647	5,717	7,139

Interesting is the fact that in Mississippi during the last four years there has been an average increase in beds in all types of registered hospitals of 351 a year, but the three years previous showed practically no increase in beds. Registered general hospital beds increased from 2,818 in 1937 to 3,112 in 1939; this is a total of 294, or 10.4 per cent.

The Mississippi survey undertaken early in 1939 presenting figures for the calendar year of 1938 revealed 100 hospitals registered or eligible for registration having a total of 9,337 beds, 402 bassinets, 5,698 births, 7,139 average census and 76,647 admissions.

The total number of beds increased 467, while bassinets increased sixty-three since the 1937 report; 1,679 more births were reported for 1938 than for 1937.

The figures for patients admitted and daily average census throughout this article are exclusive of the newborn and do not include outpatients. Patient days in all hospitals aggregated 2,605,735, representing a gain of 206,590 over the preceding year. Patient days in general hospitals numbered 604,075, or 23.2 per cent of the total.

The eighty-eight general hospitals admitted 72,442 patients or 94.5 per cent of the total number of admissions to all hospitals registered and eligible for registration. Since the 1937 report the average daily census increased 566. The total number of empty beds was less by ninety-nine, while at the same time the number of empty beds in general hospitals advanced fifty. The rate of occupancy in general hospitals increased from 50.1 per cent to 53.2 per cent in capacity.

Governmental hospitals numbered twenty-three, an increase of five, or 27.8 per cent, over the previous year. There were 6,886 governmental beds representing an increase of 242, or 3.6 per cent, over those reported in 1937.

TABLE 4.—*Mississippi Hospital Facilities by Type of Service*

	Hospitals	Beds	Bassinets	Patients Admitted	Average Census
General	88	3,112	402	72,442	1,655
Nervous and mental	6	5,587	...	3,237	5,133
Tuberculosis	4	543	...	479	311
Hospital departments of institutions	2	95	...	489	40
Totals	100	9,337	402	76,647	7,139

Nongovernmental hospitals increased by twenty-one, from fifty-six to seventy-seven, representing 37.5 per cent; the number of beds rose 10.1 per cent. It is noteworthy that during this period governmental beds represented 51.8 per cent of the total increase.

HOSPITALS ACCORDING TO TYPE OF SERVICE

General Hospitals.—During the last nine years the number of general hospitals has remained practically the same, rising or falling a point or two, six at the maximum, from year to year. In the past year there have been definite signs of improved and increasing hospital facilities resulting in the recommendation for registration of twenty-one general hospitals. This number, in addition to the four recently registered, increases the total general hospitals registered and recommended for registration from sixty-three in 1937 to eighty-eight in 1938. The number of general beds has increased from 2,752 in 1929 to 3,112 in 1938; bassinets in the same period have increased from 259 to 402. The total number of patients admitted in 1931 was 49,749; in 1938 general hospitals admitted 72,442, an increase of 45.6 per cent in the last seven years. The average census has increased from 1,371 in 1929 to 1,655 in 1938.

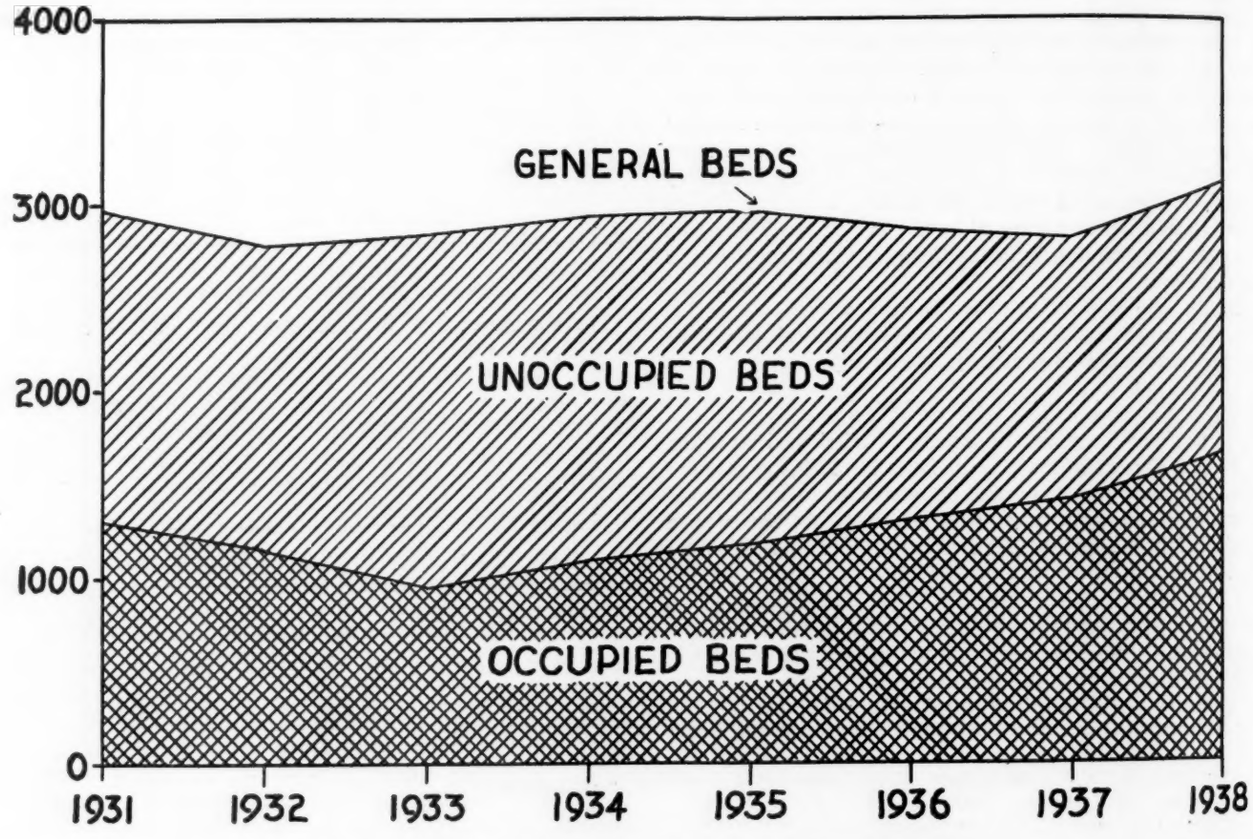


Chart 1.—General Hospital Beds in Mississippi Occupied and Unoccupied.

Hospitals were requested to break down their total admissions for the year into the number admitted to medicine, surgery, obstetrics and the various specialties, as well as designating the number of Negro patients. The response was sufficiently complete to give with the aid of the inspectors' reports the number of white and Negro patients admitted under medicine and medical specialties, surgery and surgical specialties, and obstetrics, but the number reporting on pediatrics (thirty), nervous and mental (twenty), tuberculosis (sixteen), contagion (twenty-three) and others (three) was not sufficiently complete to give an accurate picture of these services.

The specialties reported were broken down and added in their proper places under medicine and surgery. There were admitted to the medical services 19,372 white and 4,995 Negro patients, a total of 24,367. Surgical patients numbered 30,800 white and 11,230 Negro, or a total of 42,030 patients. The obstetric service admitted 5,498 white and approximately 547 Negro patients, or a total of 6,045. This gives a total of 55,670 white and 16,772 Negro or a grand total of 72,442 patients admitted to general hospitals in Mississippi in 1938.

There were reported in general hospitals 2,381 beds for white and 731 beds for Negro patients, or a total of 3,112 general beds. In 1931 there were forty-three general hospitals that accepted both white and Negro patients; today there are seventy. In 1934 there were only three registered hospitals devoted exclusively to Negro patients with a total of eighty-nine beds; today there are five registered or recommended for registration having a total of 112 beds. Thirteen hospitals are devoted exclusively to white patients. Births in general hospitals increased from 2,669 in 1934 to 5,698 in 1938, an increase of 113.5 per cent. Of the 5,698 hospital births 479 were reported as Negro births.

Two hospital departments of institutions are included on the registered list with a total of ninety-five beds, 489 patients admitted and an average daily census of forty, but are not included in the calculations for general hospitals.

TABLE 5.—*Analysis of Mississippi General Hospitals by Ownership and Control*

	Hospitals	Beds			Bassinets	Patients Admitted			Average Census
		White	Negro	Total		White	Negro	Total	
Federal	2	242	...	242	7	2,333	.....	2,333	205
State	5	175	149	324	33	4,771	5,232	10,003	269
County	3	56	18	74	9	1,215	375	1,590	33
City	2	40	...	40	5	599	.....	599	14
City-county	2	67	8	75	10	1,296	180	1,476	43
Total governmental—general	14	580	175	755	64	10,214	5,787	16,001	564
Church	2	189	24	213	24	5,265	1,040	6,305	118
Associations and restricted corporations	27	879	187	1,066	154	23,354	4,183	27,537	536
Total nonprofit—general	29	1,068	211	1,279	178	28,619	5,223	33,842	654
Individual and partnership	40	622	317	939	140	14,721	4,860	19,581	384
Corporations (unrestricted as to profit)	5	111	28	139	20	2,116	902	3,018	53
Total proprietary—general	45	733	345	1,078	160	16,837	5,762	22,599	437
Total nongovernmental—general	74	1,801	556	2,357	338	45,456	10,985	56,441	1,091
Grand Total—General	88	2,381	731	3,112	402	55,670	16,772	72,442	1,655

Nervous and Mental Hospitals.—Nervous and mental hospitals have increased from four in 1936 to six in 1938 with a total of 5,587 beds and an average census of 5,133. The six hospitals admitted 3,237 patients. The two state mental hospitals, excluding the school for mentally deficient, have a total of 4,350 beds and 2,155 admissions divided as follows: 1,888 first admissions, 255 readmissions and twelve transfers. There was a total of 1,216 discharges and 631 deaths. The average daily census of these two hospitals is 4,035. In addition to the three state owned nervous and mental hospitals there are two individually owned and one federal hospital.

Tuberculosis Facilities.—Reports from the Mississippi State Board of Health indicate that there were 1,258 deaths from tuberculosis in 1936. In 1917, when the State Sanatorium was established, the annual rate was 2,743 but thereafter the deaths decreased continuously until 1935, when 1,199 were reported in the state. It has been estimated that approximately three fourths of the tuberculosis deaths in Mississippi occur among Negroes. This is especially significant in view of the fact that only forty beds are available at the State Sanatorium for the hospitalization of tuberculous Negroes.

The Mississippi State Tuberculosis Sanatorium has an operating capacity of 450 beds, including a fifty bed unit for preventorium service. Less than 300 beds are actually in use, however, because of lack of funds. Supplementary facilities are provided in a private sanatorium of forty-five beds and two county sanatoriums with a combined capacity of forty-eight beds. In addition there were one federal, one county, four state, one city and twenty private hospitals that reported facilities for the treatment of tuberculous patients. The sanatoriums admitted a total of 479 patients last year. Pneumothorax facilities are available at the State Sanatorium, at three of the private hospitals reporting a tuberculosis service, and in the tuberculosis clinics sponsored by the state board of health. During the biennium 1935-1937 there were eighty-seven clinics conducted in thirty-nine counties throughout the state. A total of 4,289 patients were examined, 3,013 white and 1,276 Negro.

TABLE 6.—*Mississippi Hospital Facilities Limited to Negro Patients*

Year	Hospitals	Beds	Average Census
1931	3	65	23
1932	3	80	22
1933	3	95	11
1934	3	89	13
1935	3	49	18
1936	2	72	54
1937	2	75	35
1938	5	112	64

It is apparent that the state of Mississippi is in grave need of additional facilities for the segregation and care of both acute and chronic cases of pulmonary tuberculosis. At least twice the present number of beds are necessary to meet immediate demands. Nearly three times the present capacity would be required if a satisfactory ratio of beds to tuberculosis deaths were to be attained.

CHANGES IN HOSPITAL FACILITIES BY CONTROL

There are now twenty-three governmental hospitals registered and eligible for registration as compared with eighteen a year ago, an increase of five. The total capacity of all these governmental hospitals is 6,886.

County hospitals increased in number from two to five and beds from fifty to 122. Two city hospitals have been registered recently.

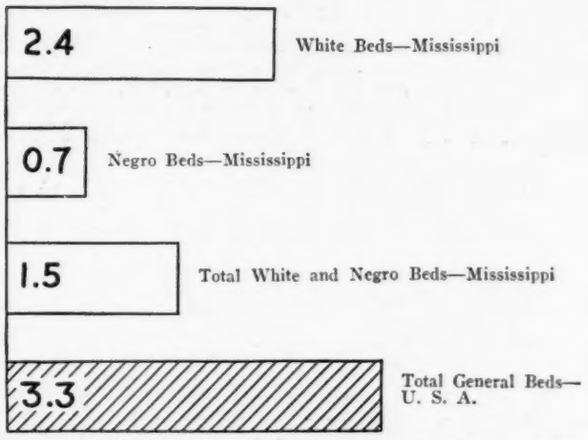


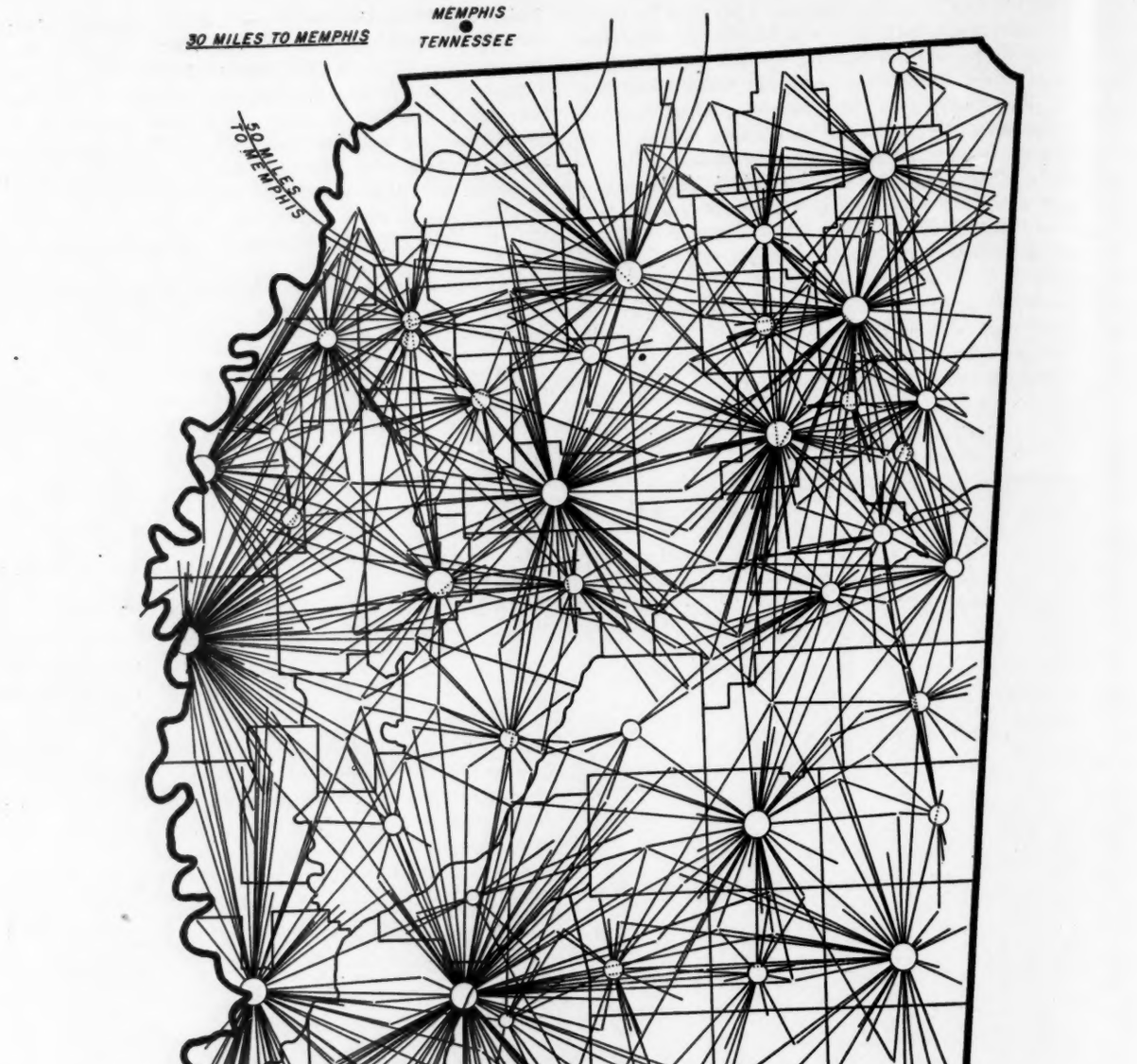
Chart 2.—Beds in General Hospitals per Thousand Population.

The returns from nongovernmental hospitals show an increase from fifty-six to seventy-seven, in beds from 2,226 to 2,451 and in bassinets from 280 to 338.

The proprietary group of hospitals number forty-seven, an increase of fourteen over the previous year. Although the proprietary hospitals are more numerous as a group, they control only 12.1 per cent of the total beds.

SOURCES OF PATIENTS

The accompanying map showing the origin of patients admitted to Mississippi hospitals in 1938 was prepared from lists furnished by each hospital. Patients whose homes were more than 70 miles from the hospital are not shown. The five state charity hospitals, the hospitals for nervous and mental



SOURCES OF PATIENTS
IN GENERAL HOSPITALS
IN MISSISSIPPI
1938

SOURCE: DATA COMPILED BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS OF THE A. M. A. FROM INFORMATION OBTAINED BY PERSONAL INSPECTION OF THE GENERAL HOSPITALS OF MISSISSIPPI

MAP I

patients and the tuberculosis sanatoriums are not included in this analysis. The map demonstrates clearly the hospital areas served regularly by each hospital center. Roads and transportation facilities throughout the state are good and apparently there is no area where the population does not have ready access to a hospital. The southeastern section reveals an area covering

TABLE 7.—*How General Hospitals Shared in Beds and Patients Admitted*

	Percentage of Beds	Percentage of Patients Admitted
Federal	7.8	3.2
State	10.4	13.8
County	2.4	2.2
City	1.3	0.8
City-county	2.4	2.0
Total governmental	24.3	22.1
Church	6.8	8.7
Associations and restricted corporations	34.3	38.0
Total nonprofit	41.1	46.7
Individual and partnership	30.2	27.0
Corporations (unrestricted as to profit)	4.5	4.2
Total proprietary	34.6	31.2
Total nongovernmental	75.7	77.9

several counties where it appears patients must travel a considerable distance to a hospital. However, this area is also served by the hospitals of Mobile, 20 miles east of the border. Likewise an area in the northwestern part of the state is served to a large extent by the hospitals in Memphis, which lies 10 miles north of the state line.

The five state charity hospitals (not shown) serve the counties in which they are located and may admit patients from any part of the state. The three state hospitals for nervous and mental diseases and the state tuberculosis sanatorium admit patients from the entire state.

Approximately 25 per cent of the patients admitted to Mississippi general hospitals during 1938 came from a distance of 30 miles or more.

TABLE 8.—*Percentage of Beds Occupied in Mississippi*

	1934	1936	1937	1938
According to Ownership or Control:				
Federal	85.0	90.5	81.6	95.5
State	88.6	82.5	85.8	87.2
County	36.0	32.0	48.0	51.6
City	13.6	13.6	....	35.0
City-county	28.6	20.0	51.1	57.3
Total governmental	86.9	82.4	84.6	87.1
Church	63.8	46.8	58.4	55.4
Fraternal	41.7	....	....	....
Associations and restricted corporations	28.9	41.4	45.2	50.7
Total nonprofit	34.9	42.6	47.4	51.4
Individual and partnership	32.2	36.2	37.1	40.9
Corporations (unrestricted as to profit)	30.3	43.8	40.6	38.1
Total proprietary	31.6	37.8	37.7	40.6
Total nongovernmental	33.0	40.2	42.7	46.4
According to Type of Service:				
General	36.4	45.4	50.1	53.2
Nervous and mental	99.0	88.5	88.7	91.9
Tuberculosis	64.5	62.9	60.6	57.3
Industrial	20.0	....	....	....
Hospital departments of institutions	36.4	44.6	36.4	42.1
Total for all hospitals	72.1	71.7	74.1	76.5

OCCUPATIONS IN HOSPITAL AREAS

Sixty-five general hospitals supplied information concerning occupations of the population served. Fifty-seven hospitals reported that the greater percentage of the population from which their patients were admitted were engaged in agricultural pursuits, four reported the greater percentage in industrial occupations and only one claimed the greater percentage in commercial lines. In three instances the population was equally divided between agriculture and commercial pursuits. These percentages were estimates, as hospital records were not all sufficiently detailed to give precise information.

BED OCCUPANCY IN HOSPITALS

The average census of 7,139 patients in all hospitals for 1938 left an average of 2,198 idle beds, or 23.5 per cent. In general hospitals there were 1,457 idle beds, as compared with 1,407 the preceding year. Occupied beds in general hospitals represented 53.2 per cent of their capacity.

Nervous and mental hospitals reported the average number of empty beds decreased from 613 in 1937 to 454 in 1938. There were 232 idle beds in tuberculosis hospitals which were

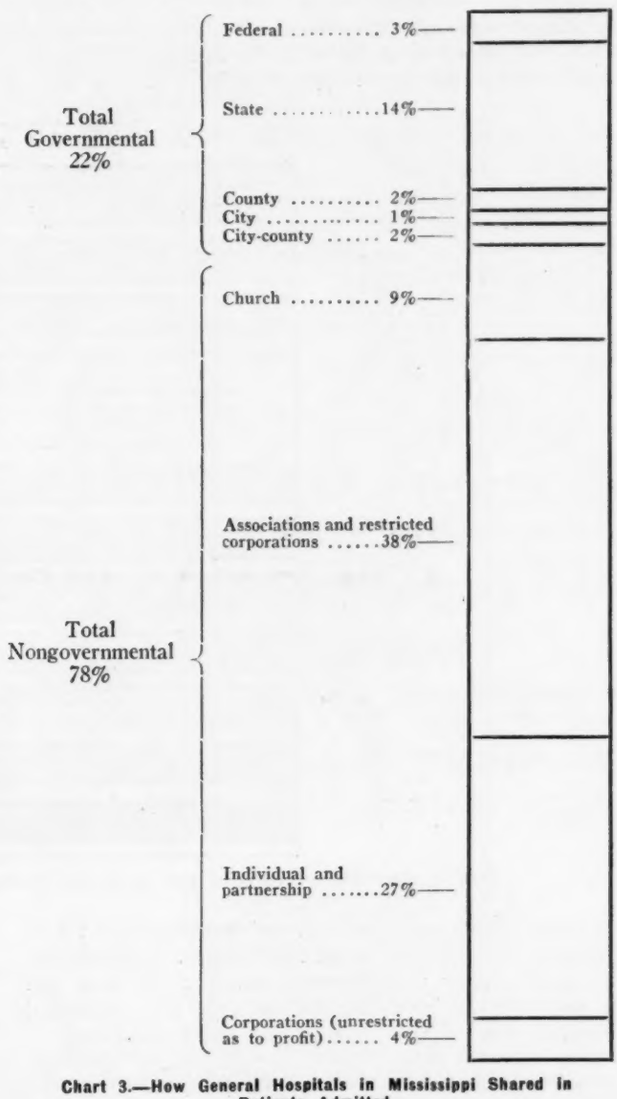


Chart 3.—How General Hospitals in Mississippi Shared in Patients Admitted.

in demand but owing to insufficient funds could not be utilized. The average number of unoccupied beds in governmental hospitals for the year was 885, a decrease of 136 over the preceding year. Occupancy of nonprofit hospitals (nongovernmental) increased from 47.4 per cent to 51.4 per cent, showing their average number of idle beds to be 643. The idle beds in all nongovernmental hospitals averaged 1,313 throughout the year.

STAFF ORGANIZATION

Relatively few of the general hospitals in Mississippi have well organized medical staffs. Forty-five have what might be considered organized staffs, as they elect officers and hold staff meetings regularly for a review of the hospital service. Since the number of general hospitals over 100 beds are few, com-

plete departmentalization is practically nonexistent. Apparently forty-three of the hospital staffs have no organization whatever. The regulation of the professional services is in the hands of the superintendent or physician owning the hospital as the case may be. Frequently the medical superintendent is the owner of the hospital and all physicians in good standing are permitted to utilize the facilities excepting the performance of major surgery.

The staff lists of 75 per cent of the hospitals of the state were examined with reference to the number of physicians on active and courtesy staffs. These hospitals claimed 699 active members and 502 courtesy staff members. Most hospitals also indicated that the facilities were open to physicians in good standing in the community.

At present there exist no approved educational programs for interns or residents in specialties in the Mississippi hospitals. Several hospitals have made application for such approval to the Council on Medical Education and Hospitals and are in the process of conforming to the requirements. Fourteen hospitals report having resident physicians. For the most part these men have had internships elsewhere and serve as general residents in order to secure additional hospital experience.

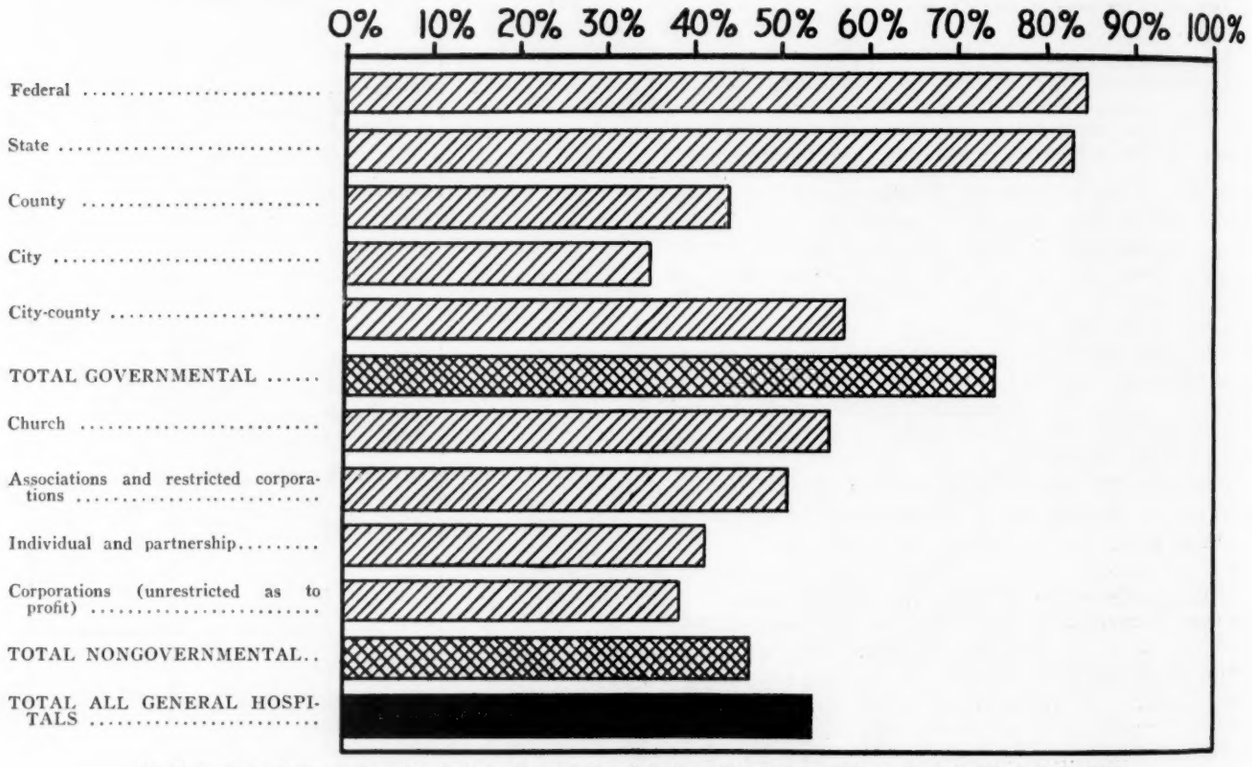


Chart 4.—Percentage of Occupied Beds in General Hospitals According to Ownership or Control, Mississippi—1938.

NURSING AND NURSING EDUCATION

Three hundred and twenty-one registered and graduate nurses were reported to be in the regular employ of eighty-eight general hospitals. These institutions also employed nineteen practical nurses. It was apparent in a number of the hospitals at the time of inspection that the lack of sufficient graduate nurses reflected in the quality of the hospital service rendered patients. For example, hospitals were examined where only one graduate nurse was employed to fulfil the duties of superintendent, supervisor of nursing and instructress to from ten to twenty student nurses.

The Mississippi State Board of Examiners of Nurses has approved thirty-six schools of nursing having a total of 710 students. Five unaccredited schools exist which reported twenty-one student nurses and ten staff registered nurses. The requirements of the nursing board state that in order to conduct a training school the hospital must have twenty-five beds and a daily average of twelve patients; high school education or its equivalent is a prerequisite for admission; the course shall be three years of continuous training; adequate equipment and facilities for classroom instruction shall be provided. The recommendations of the board concerning faculty and curriculum are in accordance with those adopted by the National League of Nursing Education.

Under the Mississippi law for the state regulation of nurses passed in 1932, certificates are issued on successful examination to nurses who are graduates of accredited schools. Nurses who are not graduates and who practiced nursing before the law took effect may be certificated as licensed attendants. Annual registration of nurses is required under the law.

The Mississippi State Board of Examiners of Nurses has not been entirely successful in the application of the standards it has adopted for schools. A number of accredited training schools are in operation which obviously fall short of the standards adopted by the board. These training schools, which are mainly in small hospitals, are being encouraged to meet the present standards, since there is need for graduates throughout the state.

The positions of hospital superintendents are held in fifty-six hospitals by physicians, in twenty-six by registered nurses and in five by lay persons. Anesthesia is administered in twenty-eight hospitals by registered nurses, in six hospitals by physicians and in five by lay anesthetists. Dietitians with some training in their field were reported on the staffs of sixteen hospitals.

CLINICAL RECORDS

Clinical records that were considered complete in all departments were found in thirty-four general hospitals. The remaining forty-seven could not be said to have satisfactory clinical records and filing indexes. It is common practice to limit the clinical chart to nurses' notes, graphic records and orders during the patient's stay in the hospital and to complete it after the patient is discharged from the hospital. A number of the hospitals allowed the charts to be placed in the permanent files without history, physical examination, progress notes, summary and final diagnosis. This condition is not peculiar to the hospitals in Mississippi and has been found in many of the smaller

hospitals throughout the country. Acceptable nomenclature of disease is used in fifteen hospitals and these institutions have full or part time record librarians, but in the majority of hospitals the superintendent or a business office employee is responsible for filing the clinical records.

DELIVERY ROOMS AND NURSERIES

Obstetric service is provided in eighty-seven of the general hospitals. Delivery rooms, separate and apart from the surgery, were found in fifty hospitals. The remaining thirty-seven utilize the surgery or deliver the patients on beds. Separate nurseries are provided in forty-four hospitals. Nurseries are not provided in forty-three hospitals rendering obstetric service. The custom of placing the newborn infant in the mother's room exists in many hospitals.

TABLE 9.—*Births in Mississippi General Hospitals, 1934-1938*

	Bassinets		Births	
	1934	1938	1934	1938
Federal	..	7	41	45
State	34	33	519	788
County	6	9	37	175
City	3	5	14	43
City-county	6	10	42	153
Total governmental	49	64	653	1,204
Church	18	24	353	601
Associations and restricted corporations	83	154	659	2,090
Total nonprofit	101	178	1,012	2,691
Individual and partnership	113	140	734	1,558
Corporations (unrestricted as to profit)	35	20	270	245
Total proprietary	148	160	1,004	1,803
Total nongovernmental	249	338	2,016	4,494
Grand total	298	402	2,669	5,698

During 1938 there was a total of 6,045 obstetric cases, and 5,698 babies were delivered in these hospitals.

RADIOLOGY DEPARTMENTS

Radiology facilities or services were reported by eighty-six general hospitals and two said they had no equipment. The scope of the radiologic service varies widely from the small portable roentgenographic apparatus to complete facilities for roentgenology including therapy. Equipment in the majority of the smaller hospitals is limited to roentgenographic work. Ten hospitals reported that registered nurses were assigned to the technical duties in the x-ray department. Thirty-one hospitals reported having thirty-three lay technicians employed. In most instances these technicians also serve the clinical laboratory.

Roentgenologic interpretations are made by the staff physicians in an overwhelming majority of the hospitals. In Mississippi there are eight physicians reporting their specialties as radiology and two are certified by the American Board of Radiology. Two hospitals reported having the services of qualified radiologists.

CLINICAL LABORATORIES

Clinical laboratory service in hospitals varies from simple routine tests to complete equipment for all types of examinations required in the general hospital. Five hospitals make no claim to laboratory facilities. Fifty hospitals stated that only routine examinations are made, not including blood chemistry or bacteriologic, serologic and tissue examinations. Thirty-three departments give more complete laboratory services within the hospital.

While many of the smaller hospitals do not have a wide scope of service in the laboratory department, clinical records demonstrate that required examinations are made by outside laboratories. Serologic tests may be referred to the state hygienic laboratory.

Examinations are made on all tissues removed in twenty-one hospitals; fifty-eight report that only selected tissues are referred to a pathologist for examination.

Six physicians serve as pathologists to the hospitals in the state. A few surgeons refer their tissues to pathologists outside the state.

Four physicians in Mississippi report their specialty as pathology or clinical pathology, and two physicians are certified by the American Board of Pathology.

Forty-eight clinical laboratory technicians were reported serving forty-two hospitals. Registered nurses with other duties serve as technicians in twelve laboratory departments.

OUTPATIENT DEPARTMENTS

Sixty-five hospitals reported that they had no outpatient department excluding the emergency service. Eighteen maintain outpatient departments and seventy-two provide emergency service. It should be borne in mind that at least thirty-six of the sixty-five hospitals without outpatient departments have doctors' offices in connection. These constitute in a sense private outpatient departments.

FIREPROOF BUILDINGS

Nineteen of the eighty-eight general hospitals in Mississippi are of fireproof construction. Two hospital plants have some fireproof buildings and others nonfireproof. Fifty-nine were considered not fireproof, although eight of these were regarded as semifireproof. It should be remembered that a great many of the smaller hospitals are one story buildings. There is a wide variation in fire fighting equipment, ranging from none at all to maximum protection including outside fire escapes.

FINANCES IN GENERAL HOSPITALS

Valuation and Indebtedness. — Eighty general hospitals reported either the real or the estimated value of their plants and equipment. Twenty-two were valued at $25,000 or less, twenty-seven between $26,000 and $50,000, nine between $51,000 and $75,000, ten between $76,000 and $100,000 and twelve at $101,000 or more.

Thirty-five reported indebtedness, either bonds or mortgage, ranging from $100 to $180,000. Thirty-five reported that they had no indebtedness other than current operating expenses. Of the thirty-two reporting specific indebtedness, twenty-one fell in the class of $25,000 or less, five between $26,000 and $50,000, two between $51,000 and $75,000, one between $76,000 and $100,000 and three $101,000 or more.

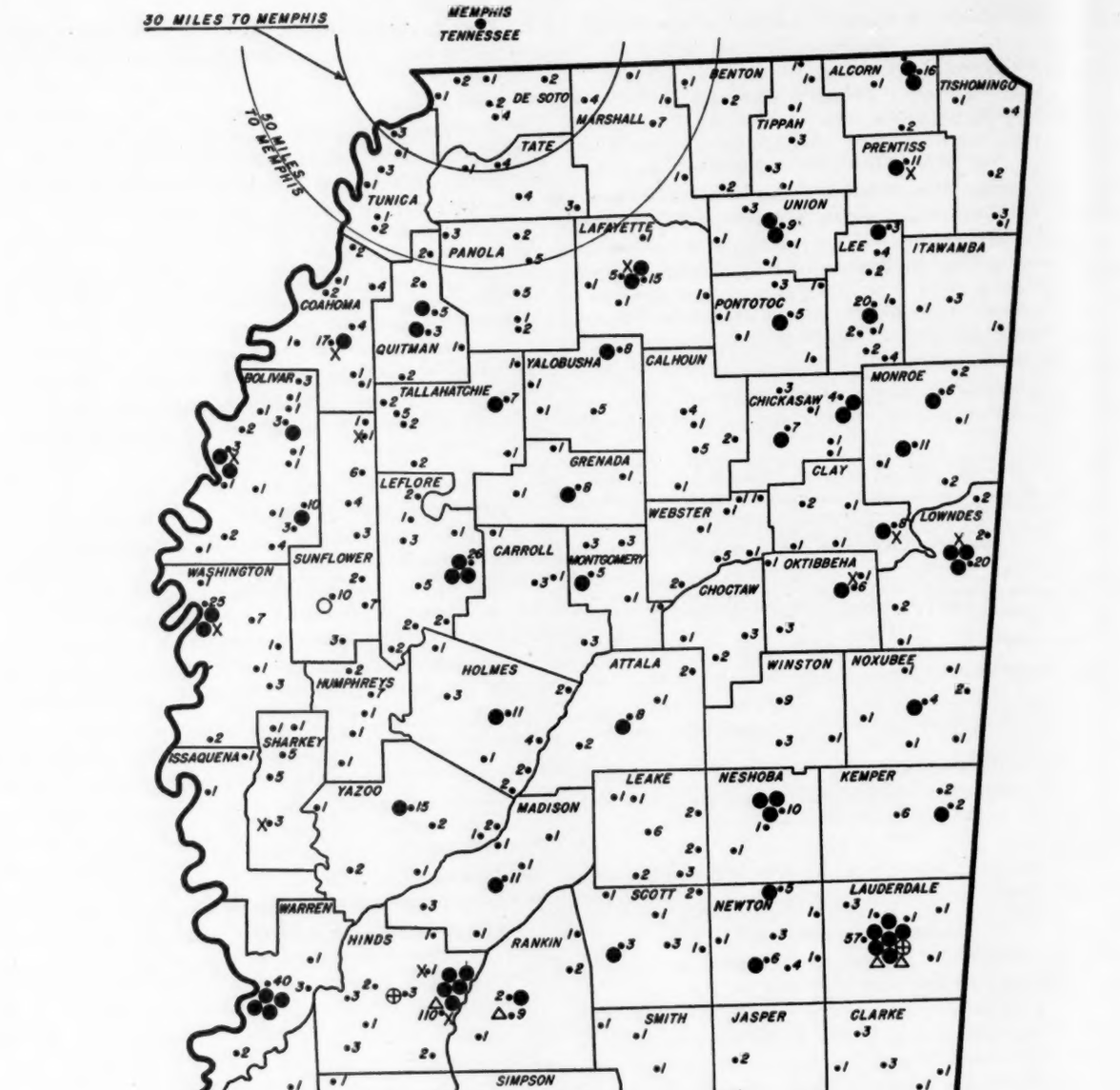
Cost per Diem

Number of Hospitals	
6	One to two dollars inclusive
20	From two to three dollars inclusive
19	From three to four dollars inclusive
20	From four to five dollars inclusive
7	From five to six dollars inclusive
4	Over six dollars
76	Number reporting
$3.83	Average cost per diem for 1938

Sources of Income.—Five state charity hospitals for general service are operated by the state. Fifty-four hospitals receive state aid in addition to their income from private patients. Sixteen of the fifty-four reported that they have additional aid from city or county or both. Two of the fifty-four have industrial contracts. Two hospitals without state aid reported city and county support and one reported contracts in addition to private patients. Twenty-four, with the exception of two that have endowments, derive their income solely from private patients; however, this figure may not be reliable, because of incomplete reporting. Three hospitals reported endowments. In addition to these the Veterans' hospital and the Indian hospital are supported by the federal government.

Physicians and Medical Service

A study of the distribution of medical personnel was made in connection with the survey of hospital facilities in Mississippi. In compiling statistical data, information was obtained



DISTRIBUTION OF PHYSICIANS AND HOSPITAL FACILITIES IN MISSISSIPPI, 1939

SOURCE: ANNUAL REPORTS, COUNCIL ON MEDICAL EDUCATION AND HOSPITALS, AND AMERICAN MEDICAL DIRECTORY, 1938

MAP II

largely from the 1938 edition of the American Medical Directory, reports of the Bureau on Medical Economics of the American Medical Association, and population studies of the U. S. Census Bureau. The Mississippi State Board of Health acts as the licensing body.

Number of Physicians.—The number of physicians in Mississippi has shown an almost continuous decline since 1909, when the first edition of the American Medical Directory was published. Prior to that time there was a decrease from 1,682 physicians in 1886 to 1,367 in 1896, but thereafter a gradual increase took place until a total of 1,749 was reached in 1906.

By 1909 the list had expanded to 2,054, but, since this period represented a transition from the Polk to the American Medical Directory, part of the increase may have been due to the difference in methods of compiling biographic data.

Only a slight reduction occurred during the next seven years, but the period 1918-1921 showed a sharp decrease from 1,975 physicians to 1,761. This change was probably a war-time adjustment, although the general decrease from 1914 to 1925 can be attributed largely to the elimination of many low grade medical schools through the activities of the American Medical Association in establishing higher standards of medical education.

In the last fifteen years the number of physicians in Mississippi has been reduced from 1,792 to 1,495. Thus the list is now at the lowest level since 1896, when 1,367 doctors were reported.

TABLE 10.—*Number of Physicians in Mississippi (1886-1938)*

Year	Number of Physicians	Population per Physician (Miss.)	Population per Physician (U. S.)
1886 Polk	1,682	673	662
1890	1,606	803	629
1893	1,465	880	650
1896	1,367	943	678
1898	1,550	832	636
1900	1,510	1,027	636
1902	1,555	998	644
1904	1,696	915	641
1906	1,749	887	637
1909 American Medical Directory	2,054	755	679
1912	2,009	895	693
1914	2,047	878	688
1916	2,048	877	694
1918	1,975	910	709
1921	1,761	1,017	744
1923	1,792	999	764
1925	1,702	1,052	781
1927	1,680	1,066	791
1929	1,633	1,097	797
1931	1,567	1,283	794
1934	1,525	1,310	784
1936	1,515	1,326	778
1938	1,495	1,353	762

According to the 1938 directory there are 1,495 physicians in Mississippi, of whom 1,307 are in private practice. Eighty-three are retired, twenty-nine devote their time principally to hospital duties, thirty-four are in government service and forty-two are engaged in other lines of professional activities. Twenty-three women physicians are included; also fifty-two Negro doctors. Reference should be made to table 10 showing the number of physicians and population ratios from 1886 to 1938.

Physicians in Relation to Population.—Since 1886 the population in Mississippi has expanded approximately 79 per cent, while the number of physicians has decreased 11 per cent. This is in marked contrast to the general population increase in the United States of 118.2 per cent between 1886 and 1934 and the increase of physicians by 84.3 per cent.

The average population per physician in the United States has varied between 629 in 1890 and 797 in 1929. The ratio in 1938 was 762:1. In Mississippi the variation is from 673 in 1886 to 1,353 in 1938. Accordingly the proportion of physicians to population is considerably lower in Mississippi than the average for the country at large.

The reduction in medical personnel is not limited to Mississippi, however, for in the period 1916-1938 there were similar decreases in other Southern states, as shown in the following tabulation:

State	Number of Physicians (1916)	Number of Physicians (1938)
Alabama	2,569	2,072
Arkansas	2,637	1,850
Georgia	3,421	2,756
Kentucky	3,584	2,762
Mississippi	2,048	1,495
Tennessee	3,457	2,917

TABLE 11.—*Distribution of Physicians by Counties* *

County	Total Population	Negro Population	Total No. of Physicians	Negro Physicians	Population per Physician
Adams	23,564	15,424	26	3	906
Alcorn	23,653	4,130	19	..	1,245
Amite	19,712	10,417	9	..	2,190
Attala	26,085	10,873	13	..	2,003
Benton	9,813	4,669	5	..	1,963
Bolivar	71,051	52,591	39	2	1,822
Calhoun	18,080	3,577	13	..	1,391
Carroll	19,765	11,273	8	..	2,471
Chickasaw	20,835	10,461	17	1	1,226
Choctaw	12,339	3,473	6	..	2,057
Claiborne	12,152	9,036	8	1	1,519
Clarke	19,679	8,048	11	..	1,789
Clay	17,931	11,080	13	1	1,379
Coahoma	46,327	35,858	34	1	1,363
Copiah	31,614	15,612	19	..	1,664
Covington	15,028	4,364	7	..	2,147
De Soto	25,438	18,771	12	1	2,120
Forrest	30,115	9,646	32	2	941
Franklin	12,268	4,867	7	..	1,753
George	7,523	1,265	5	..	1,505
Greene	10,644	2,665	4	..	2,661
Grenada	16,802	9,987	11	1	1,527
Hancock	11,415	2,815	7	..	1,631
Harrison	44,143	10,016	75	3	589
Hinds	85,118	46,559	126	5	676
Holmes	38,534	29,399	26	1	1,482
Humphreys	24,729	17,032	12	..	2,061
Issaquena	5,734	4,668	2	..	2,867
Itawamba	18,225	1,047	5	..	3,645
Jackson	15,973	3,850	14	..	1,141
Jasper	18,634	8,990	10	..	1,863
Jefferson	14,291	10,838	5	..	2,858
Jefferson Davis	14,281	7,901	7	..	2,040
Jones	41,492	11,153	38	3	1,092
Kemper	21,881	12,655	10	..	2,188
Lafayette	19,978	8,236	23	1	869
Lamar	12,848	2,729	7	..	1,835
Lauderdale	52,748	21,232	64	6	824
Lawrence	12,471	4,696	6	..	2,079
Leake	21,803	7,736	17	..	1,283
Lee	35,313	11,225	39	1	905
Leflore	53,506	40,884	44	2	1,216
Lincoln	26,357	9,526	14	..	1,883
Lowndes	29,987	17,315	27	2	1,111
Madison	35,796	28,127	18	2	1,989
Marion	19,923	7,616	14	1	1,423
Marshall	24,869	17,770	14	1	1,776
Monroe	36,141	16,054	23	1	1,571
Montgomery	15,009	6,534	13	..	1,155
Neshoba	26,691	5,480	12	..	2,224
Newton	22,910	7,979	21	..	1,091
Noxubee	25,560	20,128	11	..	2,323
Oktibbeha	19,119	11,367	11	..	1,738
Panola	28,648	17,989	18	..	1,592
Pearl River	19,405	5,149	15	..	1,294
Perry	8,197	2,748	6	..	1,366
Pike	32,201	14,439	26	..	1,239
Pontotoc	22,034	4,193	12	..	1,836
Prentiss	19,265	2,473	11	..	1,751
Quitman	25,304	17,346	15	..	1,687
Rankin	20,353	11,092	15	..	1,357
Scott	20,914	8,661	11	..	1,901
Sharkey	13,877	10,235	15	..	925
Simpson	20,897	6,943	18	..	1,161
Smith	18,405	3,573	8	..	2,301
Stone	5,704	1,424	6	..	951
Sunflower	66,364	46,646	37	1	1,794
Tallahatchie	35,568	24,204	20	..	1,778
Tate	17,671	10,628	12	..	1,473
Tippah	18,658	3,151	10	..	1,866
Tishomingo	16,411	1,028	11	..	1,492
Tunica	21,233	18,224	11	..	1,930
Union	21,268	4,541	15	..	1,418
Walthall	13,871	6,047	7	..	1,982
Warren	35,785	20,900	46	3	778
Washington	54,310	39,125	40	4	1,358
Wayne	15,295	5,369	6	..	2,549
Webster	12,128	2,558	12	..	1,011
Wilkinson	13,957	9,787	7	..	1,994
Winston	21,239	8,131	13	..	1,634
Yalobusha	17,750	8,251	15	..	1,183
Yazoo	37,262	25,220	24	2	1,553
Total	2,009,821 (1930)	1,009,718 (1930)	1,495 (1938)	52 (1938)	1,344

* Population figures included in table 11 for comparative purposes are from the 1930 census, while the number of physicians is based on the 1938 American Medical Directory.

The same period showed increases, however, in North Carolina from 2,102 physicians to 2,663; Louisiana, 2,060 to 2,200; Florida, 1,321 to 2,072. Only a slight change occurred in South Carolina, 1,399 to 1,354.

In Alabama, North Dakota and South Carolina the ratio of population to physicians is considerably higher than in Mississippi, while in North Carolina it is somewhat lower.

State	Number of Physicians (1938)	Population* per Physician
Alabama	2,072	1,397
North Dakota	508	1,390
South Carolina	1,354	1,385
Mississippi	1,495	1,353
North Carolina	2,663	1,311
United States	169,628	762

* Population as estimated for 1937 by U. S. Bureau of Census.

Location of Physicians.—By reference to table 11 and map II one will note the distribution of physicians by counties and the location of medical personnel in relation to hospital facilities.

As might be expected, the heaviest concentration of medical personnel occurs in counties where the larger cities are located and where hospital facilities are readily available. Thus in 1938 we find that 325 physicians are located in towns of less than 500 population, 222 in units of 500-999, while 422 are in towns of 1,000-4,999, and 526 in cities over 5,000. The tendency of decreasing rural practice is readily apparent in the corresponding figures for 1923:

Number of Physicians	Population of Towns
667	Under 500
259	500-999
448	1,000-4,999
418	5,000-and over

There are no counties in Mississippi without medical personnel, but the number of physicians varies from two in Issaquena County to 126 in Hinds County, where the city of Jackson is located. Sixteen counties have more than 2,000 people per physician and in one the ratio exceeds 3,000:1. In considering these ratios one should take into account that medical service is not restricted by county lines and that marked improvements in roads and transportation have made medical and hospital care readily accessible. It was the general expression of doctors throughout the state that medical care is readily available to people who desire the services of a physician.

TABLE 12.—*Memberships in Special Societies*

	Special Societies	Members
A.	Southern Surgical Association	6
	Central Association of Obstetrics and Gynecology	1
	Southeastern Surgical Congress	36
	American College of Surgeons	48
	American Board of Orthopedic Surgery	1
	American Association for Thoracic Surgery	1
	American Board of Surgery	3
B.	American Academy of Ophthalmology and Otolaryngology	10
	American Laryngological, Rhinological and Otological Society	1
	American Board of Ophthalmology	2
	American Board of Otolaryngology	10
	American College of Surgeons	9
C.	American Urological Association	1
	American Board of Dermatology and Syphilology	1
	American College of Surgeons	2
D.	American Academy of Pediatrics	9
	American College of Physicians	12
	American Board of Pediatrics	7
	American Board of Internal Medicine	1
E.	American Psychiatric Association	9
	New England Society of Psychiatry	1
F.	American Society of Clinical Pathologists	3
	American Board of Pathology	2
G.	American Roentgen Ray Society	1
	Radiological Society of North America	6
	American College of Radiology	1
	American Board of Radiology	3
	American Radium Society	1
	Total	188

Special Practice.—According to the 1938 edition of the American Medical Directory there are 366 physicians in Mississippi engaged in special practice. Of these, 174 limit themselves to a particular specialty while 192 give special attention to a limited field. Twenty-nine are certified by the Specialty Boards as shown in table 12. Membership in special societies has now reached 188. Reference should be made to table 13.

County Medical Society Membership.—In Mississippi the memberships in the American Medical Association reached their highest level in 1934, when 1,218 physicians were affiliated with local county medical societies. In 1936 the membership was 1,200, but in the following two years a marked decrease occurred, since the 1938 directory lists only 945 members in Mississippi.

TABLE 13.—*Number of Physicians in Special Practice*

Specialty	Limited Specialty	Special Attention	Total Specialists	Certified by American Boards
Surgery	33	89	122	3
Ophthalmology-otolaryngology	42	4	46	11
Internal medicine	13	..	13	1
Pediatrics	13	17	30	7
Ophthalmology	2	1	3	..
Orthopedic surgery	1	2	3	1
Roentgenology and radiology	5	3	8	2
Anesthesia	..	4	4	..
Pathology	1	1	2	1
Psychiatry	4	2	6	..
Neurology and psychiatry	5	2	7	..
Neurology	..	..	..	..
Bacteriology	..	..	..	..
Dermatology	3	2	5	1
Obstetrics	1	26	27	..
Gynecology	1	5	6	..
Obstetrics and gynecology	4	9	13	..
Clinical pathology	2	..	2	1
Otology, laryngology and rhinology	1	2	3	1
Public health	32	..	32	..
Urology	5	14	19	..
Industrial surgery	..	3	3	..
Tuberculosis	6	5	11	..
Proctology	..	1	1	..
Totals	174	192	366	29

It is of interest to note that the membership was 992 in 1909. It was 1,033 in 1916, 1,082 in 1921, 936 in 1925, and 1,067 in 1931. Thus in spite of the continual decrease in number of physicians, the percentage of county medical society memberships increased from 48.3 per cent in 1909 to 79.3 per cent in 1936, after which it dropped to 63.2 per cent in 1938.

MEDICAL EXTENSION TRAINING IN MISSISSIPPI

During the past five years the Mississippi State Medical Association and the Mississippi State Board of Health, with the material assistance of the Commonwealth Fund of New York and with the Division of Medical Extension of Tulane University of Louisiana as the executive agency, have provided the practicing physicians of Mississippi with opportunity to continue their education after licensure. A postgraduate committee of seven members has represented contributing agencies, as well as the Mississippi State Hospital Association. Subjects requested by physicians have included obstetrics, pediatrics, surgical and gynecologic diagnosis, and syphilology. Physicians paid registration fees of $3 and $5 for one or two and one-half week courses which included lectures, clinics, round table discussions and consultation services. Every section of the state has been covered; 620 physicians registered in 1935-1936 and 330 in 1936-1937; 389 have registered since 1938. By establishing from forty to forty-five teaching centers throughout the state, physicians have been brought into close personal contact with prominent medical educators who have an appreciation of the practical problems of medical care.

NEGRO PHYSICIANS

In proportion to Negro population, Mississippi has the smallest number of Negro physicians of any state in the Union. On the basis of 1930 census reports and the number of physicians listed in 1932 by the National Medical Association, the average ratio of Negroes to Negro physicians was 2,984:1 (population 11,891,143, physicians 3,985). The Southern states with a Negro population of 9,361,577 showed a ratio of 4,079:1, while the Northern states reported 1,497:1.

Mississippi with a total of 1,009,718 (1930) Negroes and only seventy-one Negro physicians has a ratio far higher than any other state, 14,221:1. The next highest ratio occurred in South Carolina, 9,562:1.[2] Alabama had 8,145:1, North Carolina 7,852:1, Louisiana 6,692:1 and Georgia 5,493:1.

The 1938 directory lists fifty-two Negro physicians in Mississippi, as compared with fifty-eight in 1936, sixty in 1934, fifty-three in 1931, thirty-five in 1925, thirty-three in 1921, forty-three in 1916 and thirty-one in 1909. Their distribution by counties is shown in table 11.

AGE OF PHYSICIANS

The 1938 directory lists 253 or 16.9 per cent of the physicians in Mississippi as having reached the age of 65. This is in marked contrast to the 8.9 per cent in 1923 when only 159 doctors in the state were classified as 65 years or over. In this connection it is of interest to note that the Bureau of Medical Economics studied a group of 71,170 physicians (1931) and found that 9,447 or 13.3 per cent were 65 years of age or more.[2] From reports obtained during the survey it would appear that various communities in Mississippi are in need of young physicians to assume the active practice gradually being relinquished by those who are now approaching the retirement age.

State Hospital Commission

A forward step in the care of the indigent sick in Mississippi was made through the efforts of the committees of the Mississippi State Medical Society and the Mississippi State Hospital Association, when in 1936 Senate Bill 223, creating the State Hospital Commission, was enacted by the legislature. An outline of the law is hereby given.

A Hospital Commission is created, composed of five members, four appointed by the governor—one from each supreme court district, one from the state at large—and the governor is the fifth member. . . .

It is made the duty of this commission to establish uniform rates for treatment of the indigent sick, within the limit of $2.50 a day for hospitalization, $7.50 for operating room and supplies for major and $2.50 for minor operations; to make rules and regulations for carrying out this purpose; to make rules and regulations for obtaining any federal funds made available for this purpose; to lay down rules setting standards to be met by hospitals qualifying to do work in treating the indigent ill; to inspect hospitals and certify the qualifications of each hospital proposing to come under the act; to supervise work of state charity hospitals; to designate certain territory to be served by state charity hospitals, and to revoke permits issued to hospitals or for hospitals. The commission is prohibited from placing in the zone of a state charity hospital a county where a qualified hospital is or shall be located.

The governor is authorized to appoint members from the county or adjoining counties to the counties in which a qualified hospital is located to serve as a board of trustees. This board is composed of three members. The board of a county owned or a municipally owned hospital shall serve as the board for this purpose. The duty of this board is to see that the benefits of this act shall apply only to persons who have been bona fide residents of the state for six months and who are unable to provide for their own care; to make monthly reports to the State Hospital Commission of the number given hospital service in their county or counties during the preceding month, and for which compensation is sought, giving the names and addresses of such patients, date of admission and discharge of each such patient, and an itemized statement of each patient's account, and send an eligibility certificate with each patient's account; to visit and inspect all hospitals in their territory, once each month, to see whether the charity patients are properly cared for, and report complaints, if meritorious, to the State Commission; to lay down necessary rules and regulations necessary to protect the patients and charity fund, and to insure an equitable distribution of the charity funds in each county and district.

The act provides for a disbursement of all per capita charity appropriations to the counties and districts on the basis of population.

In order to qualify for assistance under this act, it is necessary that a person secure a certificate of a reputable physician and two residents of good character of the county in which the applicant resides that the applicant is eligible for assistance under the act. In cases of emergency in which it is not practicable to secure a certificate before admission, the hospital may receive and care for such person and secure a certificate later.

No compensation is provided for services of members of the State Commission, and none for members of county or district boards of trustees.

Compensation to qualifying hospitals is made from a charity hospitalization fund appropriated by the legislature.

Appropriations, Biennium Beginning July 1, 1938

By House Bill No. 526, Chapter 65, Laws of Regular Session of 1938 the Legislature appropriated to the per capital part of the fund the sum of	$500,000.00
To South Mississippi Charity Hospital	57,500.00
To Matty Hersee Hospital	57,500.00
To Jackson Charity Hospital	57,500.00
To Vicksburg Charity Hospital	52,500.00
To Natchez Charity Hospital	52,500.00
Total to Charity Hospitals	$277,500.00
Grand Total to Charity Fund	$777,500.00[3]

Fifty-four hospitals, in addition to the five charity hospitals, have been approved for state aid by the commission.

Counties designated to the state charity hospitals are as follows:

Adams County to Natchez Charity Hospital, Natchez.

Hinds County to Mississippi State Charity Hospital, Jackson.

Jones County to State Charity Hospital, Laurel.

Lauderdale County to Matty Hersee Hospital, Meridian.

Warren County to Mississippi State Charity Hospital, Vicksburg.

Patients from the counties designated are required to go to the hospitals designated, but all hospitals may receive charity patients from any county in the state. During 1938 approximately 10,000 patients were treated in state charity hospitals.

Number of Patients Treated Under the State Hospital Commission

(State Aid)	
Year of 1936-1937	5,505
Year of 1937-1938	6,566
July 1, 1938, to Feb. 28, 1939	6,406

The minimum standards of the Mississippi Hospital Association have been adopted by the State Hospital Commission and are as follows:

1. All hospitals shall have modern and efficient buildings which are separate and apart from any other building and operated solely for hospital purposes.

2. Physicians and surgeons privileged to practice in the hospital shall be organized as a definite group or staff; the word "staff" to include all doctors who practice in the hospital.

3. Membership on the staff shall be restricted to physicians and surgeons who are (*a*) full graduates of medicine residing in this state, and members of their respective county medical societies and of the Mississippi State Medical Association; (*b*) competent in their respective fields, and (*c*) worthy in character and in matters of professional ethics. In this latter connection the practice of the division of fees, under any guise whatever, is prohibited.

4. The staff shall initiate and, with the approval of the governing board of the hospital, adopt rules, regulations and policies governing the professional work of the hospital; all doctors shall read and sign the rules and regulations upon election to the staff. These rules and regulations and policies shall specifically provide:

(*a*) That staff meetings be held at least once each month.

(*b*) That the staff review and analyze at the monthly staff meeting their clinical experiences in the various departments of the hospital, such as medicine, surgery, obstetrics and the other specialties; the clinical records of patients, free and pay, to be the basis of such review and analysis.

5. Accurate and complete records shall be written for all patients and filed in an accessible manner in the hospital, a case record to include at least identification data; complaint; personal and family history; history of present illness; physical examination; special examinations, such as consultations, clinical laboratory, x-ray and other examinations; provisional or working diagnosis; medical and surgical treatment; gross pathological findings; microscopic pathological findings when indicated and possible; progress notes; final diagnosis; condition on discharge; and, in case of death, autopsy findings when possible to obtain.

2. Distribution of Physicians in the United States, published by Bureau of Medical Economics of American Medical Association, May 1936.

3. Outline of the Hospital Commission Law of the Regular Legislative Session of 1936, Senate Bill No. 223, Ch. 178: Mississippi Doctor **16:** 27 (Nov.) 1938.

6. Diagnostic and therapeutic facilities under competent supervision shall be available for the study, diagnosis and treatment of patients, these to include at least (*a*) clinical laboratory and (*b*) an x-ray department.
7. At least one doctor competent in the practice of surgery and one doctor competent in the practice of internal medicine, residing in the town or city in which the hospital is located, shall be available at all times.
8. Competent nursing service shall be available at all times and the superintendent of nurses shall be a graduate nurse registered in Mississippi.
9. A physician or registered nurse trained in anesthesia shall administer all anesthetics to patients.[4]

An inspection system of the hospitals approved for care of charity patients has been developed by the commission. The secretary reports that all the hospitals have been inspected twice since the enactment of the law. Inspections consist of personal visits by the secretary or one appointed by him to examine the facilities, records and general organization. In addition, annual questionnaires giving comprehensive data concerning each hospital are required by the commission.

The Committee on Hospital Legislation of the Mississippi State Hospital Association has more recently directed efforts toward the establishment of a central state hospital unit in Jackson to care for the indigent sick in highly specialized cases which might be too expensive and in some instances impracticable to treat in the small general hospitals in Mississippi.

Mississippi State Hospital Association

The Mississippi State Hospital Association, recently incorporated, now has seventy institutional members. According to the constitution and by-laws, the purposes of the association are:

To promote the welfare of the people of Mississippi by the furthering of efficiency and economy in the institutional care and management of hospitals and dispensaries of the state; to improve the service rendered to patients by such institutions; to secure the cooperation of other organizations with similar objects with a view to coordination of effort, and in all ways to advance the interests of all medical service institutions.

To these ends, this association shall maintain such affiliations with the American Hospital Association as shall, from time to time, be mutually desirable, and shall cooperate with it in promoting common aims and purposes within this state.

Standing committees of the organization are constitution and rules, legislation and membership. Special committees are appointed for charity hospitals, mental hospitals, public and community relations, minimum standards, nursing, publications, fixed periodic payments for hospital services, hospital records, hospital staff rules and regulations, approved merchandising and hospital taxation.

The association has adopted minimum standards for hospitals and these have been adopted by the state hospital commission in determining those eligible for state aid. These minimum requirements appear in the section dealing with the state hospital commission.

The secretary of the Mississippi State Hospital Association is also secretary for the hospital commission, thus providing a good working relationship between these two agencies for the improvement of hospital service. The hospital standards adopted by the association and commission have had a wholesome effect as a compelling stimulus to hospitals in order to become members of the association and to become eligible for state aid. At the time of the inspections, conditions were found existing in hospitals on the state aid list and in the membership of the association which did not fully conform to the minimum requirements adopted. However, a steady improvement in these deficiencies is taking place.

Mississippi State Board of Health

The state department of health was established in 1908 at the request of the state medical association. It has a voice in formulating policies of the department, as it nominates members for the state board of health. This relationship has resulted in a spirit of cooperation and good will between the general medical profession and the health department.

The state board of health consists of ten members—nine appointive members and one who is elected by the state board of health to serve as executive officer and secretary. Eight of the appointive members must be regularly qualified physicians of the state and members of the state medical association. The other appointive member must be a dentist. Three medical members from each congressional district (congressional districts as of 1932) are nominated to the governor by the state medical association and three dentists from the state at large by the state dental association, from which number the governor appoints one medical member to serve from each respective district, and one dentist to serve from the state at large. These appointments must be confirmed by the senate. The term of office of each appointive member is six years. The appointments are timed so that three members are appointed every two years.

The state board of health is responsible for the activities conducted in both full time and part time county health departments. Part time health services are administered by local physicians, who are appointed by the state board of health as county health officers to serve on a part time basis, whereas full time health services are administered by physicians and other personnel who have received public health training.

The supervision of the state board of health in local programs includes: (*a*) designation of qualifications for personnel; (*b*) approval of appointments, and in full time areas salaries also; (*c*) promulgation of rules and regulations for the protection of public health throughout the state; (*d*) promulgation of rules and regulations governing program and general conduct of work of county health departments.

State wide services include registration of births and deaths, marriages and divorces; supervision of water supplies and sewerage systems; supervision of midwives; industrial hygiene service; laboratory service; and furnishing special consultative services. In all instances, however, the local health department is expected to participate in these activities and to assist the state in the performance of its duties.

Mississippi now has thirty-nine full time county health officers and part time officers in the remaining forty-three counties.

DIVISIONS OF THE STATE HEALTH DEPARTMENT

1. Division of county health work and epidemiology:
   (*a*) County health department administration.
   (*b*) Malaria control.
   (*c*) Communicable disease control.
2. Division of sanitary engineering.
3. Division of maternal and child health.
4. Division of vital statistics.
5. Division of tuberculosis control.
6. State hygienic laboratory.
7. Division of industrial hygiene and factory inspection.

FULL TIME COUNTY HEALTH DEPARTMENTS

All counties of the state are empowered and required to carry out state health laws and regulations of the state board of health and to institute measures for the protection of the public health. Any county in the state may organize a full time health department; that is, a health department where all members of the personnel devote their entire time to health duties. Certain contiguous counties may jointly contribute to the organization of a district health department.

A full time county health department usually consists of the following personnel: one full time director, a public health nurse, a sanitation supervisor and a secretary. Additional personnel may be added from time to time as funds are made available.

The county health officer must have not less than one year of clinical experience in practice or a rotating internship in which three or more months are spent in pediatrics and infectious diseases. He shall have had not less than three months of special training in public health.

Under the sanitation personnel there may be a public health engineer, veterinarian, sanitation supervisor, dental hygienist, laboratory technician and clerk.

4. Mississippi Legislature, Regular Session 1936, Senate Bill 223, Section 4.

Sources of Funds.—The state board of health gives financial aid to counties operating a full time health department according to the health needs of the area, the amount of local funds available for health work, the type of organization established, and the ability of the area to continue support of the organization. The major financial responsibility for maintenance of the health department rests with the local area.

The board of supervisors is authorized by law to appropriate funds from the general county fund or in certain counties by a special tax levy. Local sources, such as cities, towns and civic clubs, may also appropriate funds for the support of the health work.

Certain trust funds from the federal government and certain nonofficial health agencies are allotted to the counties by the state board of health with the approval of the contributing agency. Outside funds are paid into the state treasury and distributed together with the state funds. For the year ended June 30, 1937, trust funds far exceeded the state appropriations. The Commonwealth Fund is by far the largest nongovernmental organization supporting the public health program. Government agencies contributing include the United States Public Health Service under the Social Security Act and the United States Maternal and Child Health Department.

PART TIME COUNTY HEALTH DEPARTMENTS

A part time county health department may be defined as a statutory division of county government with a physician in charge who gives only a part of his time to his official duties. Additional personnel may be appointed on a full time basis.

The state board of health appoints the part time county health officer who is to serve in each county. He must be a competent physician and a member of the state medical association. The salary of the part time health officer is fixed by the board of supervisors and paid from the county treasury.

Minimal duties expected of a part time health officer are: (*a*) the collection and transmitting of morbidity reports from physicians of his county; (*b*) investigation of all cases of communicable disease reportable within twenty-four hours and establishing isolation, quarantine and other control measures for it, and (*c*) otherwise to enforce all rules and regulations of the state board of health as it may direct. The health officer is responsible to the executive officer of the state board of health for the conduction of his program.

It is the policy of the state board of health to perform certain technical services of a routine nature for all part time county health departments. Programs of a special nature such as dental hygiene, immunization and maternal and infant hygiene service shall be taken up with the health officer prior to their execution. If possible, the cooperation of the health officer should be obtained in order to insure a spirit of mutual responsibility in the execution of any special program.

ACTIVITIES OF COUNTY HEALTH DEPARTMENTS

1. Law enforcement.
2. Acute communicable disease control, including immunizations.
3. Environmental sanitation.
4. Maternal hygiene.
5. Infant and preschool service.
6. School hygiene.
7. Dental hygiene.
8. Venereal disease control, including clinics.
9. Tuberculosis control, including field clinics.
10. Laboratory. The purpose of this service is to supplement all measures used by physicians in the early diagnosis and control of communicable diseases as well as to determine the safety of food and drink supplies.

That excellent records have been made by certain county health organizations in Mississippi is attested by the places certain county health units have won in competition promulgated by the American Public Health Association in counties of nine southeastern states. In 1936 Pike County and Lauderdale County won first and second places respectively, and in 1937 Coahoma County won second place. The appraisal of the work of the county health department is based on a form prepared by the American Public Health Association.

The distribution of the full time county public health units, as well as the part time units, is shown on the accompanying map. When a full time health officer serves more than one county, district offices are established in each county.

The public health nursing service was organized in 1921. All personnel is cleared through the office of the director of public health. The duties of the public health nurses are essentially the same as those recommended by the National Organization of Public Health Nursing. Thirteen counties not having full time health officers are supplied with public health nursing service directly from the state office. Nurses are allotted to counties according to the assessed valuation for tax purposes and not according to the population.

Health education is stressed as one of the more important activities of all the full time county health departments. Newspaper publicity, radio talks, window displays and lectures to various organizations are utilized effectively. The subject matter may concern maternal health, venereal diseases, malaria, tuberculosis, communicable disease, and so on.

The service rendered by midwives throughout the state has undergone steady improvement. In 1921 there were 4,209 midwives. This number has decreased to approximately 3,000 in 1937, indicating a tendency to require the doctors' services. All but seventy-five of the midwives are Negresses. Midwives are organized into groups for the purpose of registration and instruction through the state health department. An important part of the work of the county health nurse is instruction to midwives and inspection of their equipment.

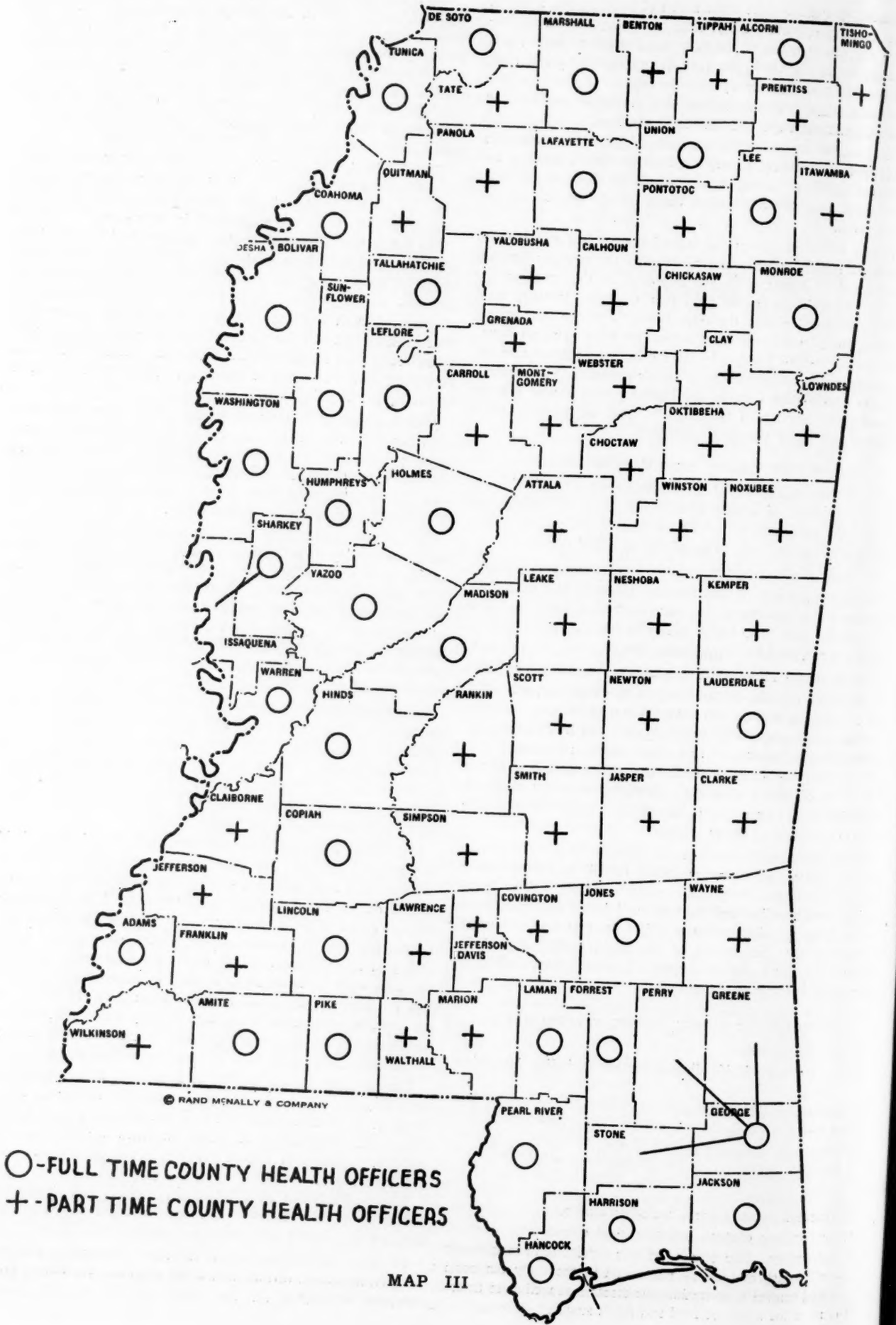
Infant and preschool clinics have been inaugurated in many counties. Defects when found are pointed out to parents, who are urged to take their children to local doctors for treatment. Public health nurses follow up each case in the homes in order to secure the best cooperation from the parents. Annual examinations of children in the first, third, fifth and seventh grades are carried on regularly in most counties.

Mississippi has established an excellent record in typhoid and malaria control. The other more common communicable diseases have been held in check by the immunization program carried out by the county health departments. The field tuberculosis service is under the supervision of the state sanatorium. Clinics are held in various sections of the state several times each year by the traveling staff of the state sanatorium. While the field work in tuberculosis is steadily improving, the facilities for hospitalization fall short of the needs. The work of the tuberculosis clinics is supplemented by home visits of the county health nurses, making possible the examination of contacts, instruction in the care of home cases, and so on.

The program for the control of syphilis is being developed; several years will be necessary to reach the maximum effectiveness. In most counties not only the patients in antepartum clinics but some groups of factory workers are examined for syphilis. Contacts of known positives are encouraged to have serologic tests.

The establishment of tuberculosis, syphilis and antepartum clinics in various counties and regions represents a definite forward step in the improvement of public health in the state.

Sanitary Engineering.—The sanitary engineer's activities concern inspection of milk and water supplies. He is in a large measure responsible for the success of the malaria control



○-FULL TIME COUNTY HEALTH OFFICERS

+-PART TIME COUNTY HEALTH OFFICERS

MAP III

campaign. Much has been accomplished in recent years through the construction and improvement of drainage ditches with WPA funds. It is reported that largely through this work the number of deaths due to malaria in Mississippi has now been reduced to less than 300 a year.

Definite progress in recent years has been made in the building of sanitary privies in the rural communities and in establishing adequate sewerage control for the towns and cities. Wide use of government specifications and WPA help has been made here.

Laboratories.—Considerable variation exists in the scope of the laboratory services. Many county health units depend almost entirely on the service provided by the state hygienic laboratory where serologic tests, agglutination tests, examination of blood smears for malaria, bacterial counts on milk and water are available. Where the laboratory facilities are limited, it may be possible in some instances to improve the service by the utilization of hospital laboratory departments in the community. The state hygienic laboratory provides serologic examinations for private practitioners and hospitals throughout the state. Certain biologic products and materials for clinical tests are supplied by the department.

Veterinarians.—A few departments include part time veterinarians for inspection of animals and meat.

Dental Hygienists.—A number of county health departments employ part time dental hygienists. The work is carried on in dentists' offices, where certain days are set aside for school children. Lectures in schools and clubs serve to educate adults as well as children in the better care of teeth.

Crippled Children.—The crippled children's service operates under the department of education along with vocational rehabilitation. Most of these children are hospitalized or brought to offices of the private doctors in Jackson, Memphis and Mobile. The public health department cooperates in locating and reporting children to this department.

Medical Licensure.—The granting of license to practice medicine in Mississippi is under the jurisdiction of the state board of health. An active campaign against illegal practitioners is carried out by the state department. Since it has been difficult to secure convictions of illegal practitioners, the department leans heavily on the health educational program to improve conditions. It is interesting to note that the number of chiropractors has been reduced during the past fifteen years from 178 to forty-seven.

Vital Statistics.—A clerk is appointed in each department who in addition to the usual office routine is responsible for reporting on births, deaths and communicable diseases.

One of the tables prepared by the Division of Vital Statistics which seemed to have a bearing on the extent to which the people in Mississippi are now receiving medical care is of particular interest.

Number and Percentage of Patients Dying Without Medical Care

	White	Colored	Total Number	Total per Cent
1933.....	461	3,543	4,004	18.5
1934.....	415	3,028	3,443	15.9
1935.....	400	2,793	3,193	15.0
1936.....	479	3,056	3,535	14.6
1937.....	531	3,191	3,722	15.5

Instructions to reporting clerks exclude sudden deaths caused by cerebral hemorrhage, thrombosis, trauma, and the like.

In order to properly evaluate these figures, additional information concerning deaths reported occurring without medical care was secured by further investigation of 138 recent cases. Health officers in Lee, Chicksaw, Calhoun, Harrison, Pike, Coahoma and Monroe counties lent their assistance. Direct contact was made with the families in which the deaths occurred. The first-hand investigation of these deaths brought forth illuminating facts concerning the reliability of the records. Seventy-four of these persons actually did receive medical care, twenty-three died suddenly without medical care, nine were under the care of midwives, three had been treated by quacks, and twenty-nine did not or would not have doctors.

The latter group contains a few on which complete information was not obtained. It was learned that of these, twenty-three could have had the services of a physician, but made no request. Not one instance was found among the 138 personally investigated cases where an unsuccessful attempt had been made to secure the services of a physician, nor was there a single instance in which the doctor had refused to respond to a call.

Health officers, physicians and laymen interviewed stated that they did not know of any person who had tried to get a doctor and failed. Individuals asked if they could secure the services of a physician even though they were unable to pay most frequently answered that they could. Some persons stated that they could get the services of a physician but made no attempt because of their inability to pay. These facts would seem to point toward economic circumstances and further educational needs rather than lack of available medical service.

Farm Security Administration

The Rural Resettlement Administration, now the Farm Security Administration, early in 1936 proposed plans to enable the farm clients of the administration to provide for themselves medical services on an annual prepayment basis. According to a statement from Dr. R. C. Williams, medical director of the Farm Security Administration (Jan. 19, 1939), states with which understandings have been worked out for medical care through the Farm Security Administration total thirty (January 1939), including Mississippi. The number of counties in Mississippi in which plans are in operation total fourteen as follows:

Adams	Leflore	Smith
Amite	Madison	Sunflower
Copiah	Pike	Walthall
Jefferson Davis	Scott	Wilkinson
Leake	Simpson	

Up to January 1939, approximately fifty counties had accepted the plan.

The Farm Security Administration agrees to lend its clients a stated amount, usually between $12 and $30 per family annually, to be used for medical care. This amount is based on the abilities of the families to pay as determined by the expected net income according to the farm and home plans. Each client has the privilege of choosing any physician or druggist entering into the agreement but must confine his choice as much as possible to physicians within a reasonable distance.

The funds are placed in the hands of trustees agreed on by the physicians concerned and the Farm Security Administration supervisor in the county. Physicians render such services as in their opinion are necessary. At the end of each month physicians furnish the trustee an itemized statement of the services rendered. The funds are divided into twelve equal monthly allotments and all bills are paid on a pro rata basis. The schedule of charges for services and drugs is based on the usual charge for services furnished people of moderate means in the community. A variety of plans has been proposed by the Farm Security Administration, and the experience with these plans has shown clearly that one uniform plan cannot be operated satisfactorily for all communities which differ so widely in local conditions.

It appears to be the policy of the Farm Security Administration to provide an opportunity for the medical society to examine the administration's proposals for medical services to its clients before placing the plan in actual operation. Medical societies are warranted in studying these plans with the same sympathetic attitude that they have toward any other persons who need medical care. The actual operation of any specific administration plans will, of course, depend on the acceptance by the practicing physicians in each community in which a program is proposed. These physicians may properly look to state and county societies for an expression of acceptance or rejection of the principles involved.

In Pike County the funds so lent to clients are under the trusteeship of the county medical society. Funds are divided as follows:

Medical care, ordinary drugs and incidentals.....70%
Hospital care, extraordinary drugs, serums and incidentals..30%

Since the plan has been in operation in Pike County, the percentages of accounts paid the doctors under the pro rata scheme is as follows:

	Percentage of Accounts Paid
July, 1938	46.5
August, 1938	47.0
September, 1938	92.0
October, 1938	76.0
November, 1938	100.0
December, 1938	80.0
January, 1939	62.0
Average for Seven Months	70.5

Early in 1939 there were some 200 families under medical care through the Farm Security Administration and, according to an estimate made by the secretary of the county society, this will be increased to about 500 during the year.

The council of the state medical society considered the subject and went on record that it was opposed to state medicine or any other kind of medicine that would break the relationship of the family doctor-patient, but it also stated "In event that conditions should arise in some county where the members of organized medicine felt that the group being helped by the Farm Security Program needed better medical care, then it would be left to the members of the organized medical society in that county to work out the program." [5]

SUMMARY

During the last four years there has been a steady increase in the number of hospital beds in Mississippi. Facilities for Negroes have increased less rapidly than those for the whites.

Admissions to general hospitals increased 45.6 per cent in the last seven years, while the beds increased 4.6 per cent. The occupancy in general hospitals is increasing even more rapidly than the number of beds and yet only 53.2 per cent of the general hospital beds were occupied in 1938. General hospitals admitted 94.5 per cent of all admissions for 1938, but patient days in general hospitals represented only 23.2 per cent of the total.

In appraising medical service in this state one must take into account the fact that over 50 per cent of the population in Mississippi are Negroes and that the demand for medical service among this group may fall below the requirements of the white population.

While the population is about equally divided, the number of general hospital beds for Negroes is 0.7 per thousand as compared with 2.4 per thousand of the whites. In proportion to the Negro population, Mississippi has the smallest number of Negro physicians of any state in the Union.

The geographical distribution of general hospital facilities in Mississippi may be considered adequate excepting possibly in the extreme northwest and the extreme southeast, but these areas are partially served by extrastate hospitals. Distance and transportation offer no serious difficulties in hospitalization since approximately 25 per cent of the patients admitted to general hospitals in 1938 came from a distance of thirty miles or more.

More qualified radiologists and pathologists are needed in the state. Clinical laboratory facilities do not provide a sufficiently wide scope of service in most hospitals. Investigation indicated clinical laboratory examinations should be more complete.

Obstetrical delivery rooms and nurseries are needed in many general hospitals offering this service; thirty-seven have no delivery rooms and forty-three have no nurseries.

The tuberculosis program is in need of more adequate financial support in order to utilize the present facilities and to increase the number of beds about 100 per cent.

The number of beds for nervous and mental patients is apparently adequate for the needs of the state. A field psychiatric clinic program, however, is needed.

The development of nursing education in Mississippi has not kept pace with the advances in other parts of the country and this may be partially ascribed to present economic conditions. The number of graduate nurses employed in general hospitals does not compare favorably with accepted standards of hospital service.

Mississippi has no hospitals approved for intern or residency training. Several have made application and are now in the process of conforming to the requirements.

It appears that the distribution of physicians in Mississippi has followed the general trend away from rural areas, but this does not necessarily mean a lack of sufficient medical service. With increased hospital facilities and modern methods of transportation and communication it is possible for individual physicians to serve larger territories. The economic factor is no doubt of paramount importance in the distribution of physicians.

Since 1886 the population in Mississippi has expanded approximately 79 per cent while the number of physicians has decreased 11 per cent. Apparently the state is finding it difficult to attract young practitioners as evidenced by the high percentage of physicians in the state over 65 years of age.

In Mississippi, as in some other Southern states, the population has increased while the number of physicians has actually decreased. It does not, however, necessarily follow that medical service is inadequate or inferior.

A state wide cooperative medical extension program has been in successful operation for five years.

The Mississippi State Board of Health with the support of private and public funds has undergone a remarkable development in recent years. At present there are thirty-nine full time county health officers and part time officers in the remaining forty-three counties.

That there is an awakening of the public and the medical profession to the value of hospital service generally is apparent in the rapid increase in the number of beds in registered hospitals and the even greater rise in occupancy during the past four years as compared with the previous period. The education of the public is also reflected in the increase in the number of births in hospitals.

All available information clearly points to the fact that existing general hospital beds are sufficient for the white population of Mississippi. Additional beds for Negroes are needed.

Extensive inquiry among all classes of the population, including doctors, health officers, nurses and workers, elicited the almost uniform response that there is practically no one in Mississippi who cannot secure medical care regardless of his ability to pay.

5. Medical Care for Clients of Farm Security Administration in Mississippi, Mississippi Doctor **16**: 59 (Feb.) 1939.

OFFICIAL NOTES

ADDRESSES BY OFFICIAL STAFF

DR. W. W. BAUER:

June 9—Marquette University Testimonial Banquet for Dr. Irvin Abell, Milwaukee.
June 16—Physical Education Conference, Iowa City.
June 28—Second Health Institute at Ohio State University, Columbus, Ohio.

DR. MORRIS FISHBEIN:

June 7—University of Chicago Alumni Day Banquet, Hutchins Commons, Chicago.
June 8—Commencement address, Rochester Public Schools, Rochester, Minn.
June 18—Mount Sinai Intern Alumni Association, Chicago.
June 25—Maine Medical Association, Poland Springs, Maine.
June 29—American Pharmaceutical Manufacturers Association, Skytop, Pa.

RADIO BROADCASTS

The radio broadcasts by the American Medical Association and the National Broadcasting Company, under the title Your Health, continue as previously announced each Wednesday over the Blue network of the National Broadcasting Company at 1 p. m. eastern standard time (12 noon central standard time, 11 o'clock mountain time, 10 a. m. Pacific time).

Starting April 30, daylight saving time took effect in Chicago. The program is therefore being broadcast at the same hour Chicago daylight saving time, which means one hour earlier central standard time, two hours earlier mountain time and three hours earlier Pacific time. In communities where daylight saving time is in effect there is no change in the hour of the broadcast.

Owing to network conflicts the Chicago broadcast does not occur at 1 o'clock Wednesday but there is a rebroadcast from a recording over station WENR at 8 o'clock each Monday evening (8 o'clock Chicago daylight saving time, 7 o'clock central standard time). The program broadcast each Monday is identical with the network program of the preceding Wednesday.

The next three programs to be broadcast, together with their dates and their topics, are as follows:

June 7. Vacations—Why and How.
June 14. Never Stop Learning.
June 21. Better Babies.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ALABAMA

Statue of James Marion Sims Dedicated.—A life size bronze statue of Dr. James Marion Sims, New York (1813-1883), pioneer gynecologist who spent his early years of practice in Alabama, was dedicated April 19 during the annual session of the Medical Association of Alabama. The statue stands on the capitol grounds near the bronze likeness of Dr. John Allan Wyeth, confederate soldier, surgeon and author and founder of the New York Polyclinic Medical School and Hospital.

ARKANSAS

Society News.—The Hot Springs Academy of Medicine was addressed April 4 by Drs. Samuel A. Thompson and Rufus B. Robins, Camden, on heart problems and head injuries respectively.——At a meeting of the Benton County Medical Society, Gravette, April 13, Drs. James T. Powell, Gravette, discussed "Cranial Trephining and Results" and Clyde L. McNeil, Rogers, "Sulfanilamide."—— Dr. Barnett P. Briggs, Little Rock, addressed the Pulaski County Medical Society April 17 on "Chronic Nontuberculous Lung Infections in Children."—— The Sebastian County Medical Society was addressed April 11 by Dr. Charles T. Chamberlain, Fort Smith, on "Sulfapyridine."

County Society Sponsors Postgraduate Course.— The Mississippi County Medical Society is sponsoring a postgraduate course at Osceola. The program opened April 4 and will continue for ten weeks. The staff of the University of Tennessee School of Medicine, Memphis, is offering the instruction with the assistance of the county medical society.

DISTRICT OF COLUMBIA

New Officers of District Society.—Dr. Daniel L. Borden was chosen president-elect of the Medical Society of the District of Columbia at its annual scientific assembly in Washington April 25-27. He will take office July 1, 1940, succeeding Dr. John H. Lyons, who is president-elect, and who takes office July 1 this year, succeeding Dr. William J. Mallory. Other officers include Drs. John J. Shugrue and Coursen B. Conklin, who has been secretary for twelve years, vice presidents. At the meeting the society decided to launch a program to help reduce the number of traffic deaths in Washington, approving the appointment of a committee on automobile accidents. A postgraduate course in gastro-enterology comprised the society's scientific program, with many out of state and local physicians as instructors.

Annual Psychiatric Meeting.—The second annual meeting of the Medical Society of St. Elizabeths Hospital was held in Washington April 14. The speakers included:

Dr. James M. Cunningham, Hartford, Conn., The Significance of the Structure of Language for Psychiatry.
Dr. Bruce B. Robinson, Newark, N. J., Importance of the Public School in the Causation, Understanding and Treatment of the Personality Problems of Children.
Winifred Richmond, Ph.D., Washington, The Story of Psychology at St. Elizabeths Hospital.
Dr. Walter Freeman, Washington, Shock Treatment and Prefrontal Lobotomy—A Comparison.
Dr. Ernest E. Hadley, Washington, Psychoanalysis and Research.
Dr. Harry Stack Sullivan, Washington, Some Notes on the Therapeutic Interview.
Dr. Nolan D. C. Lewis, New York, The Pluralistic Approach in Psychiatric Research.

Guests at the dinner were Drs. Charles Macfie Campbell, Boston, and Riley H. Guthrie; Dr. Campbell gave the annual address.

FLORIDA

Changes in Health Officers.— Dr. Rayburn N. Joyner, Marianna, has resigned as director of the Jackson County health department to enter the private practice of medicine. Dr. Charles W. McDonald, Marianna, district health officer, has been named acting health officer.——Dr. Charles M. Pearce, formerly state health commissioner of Oklahoma, has been appointed health officer of Lake County, succeeding Dr. Terry Bird. His headquarters will be in Tavares.

GEORGIA

Personal.—A bust of Dr. Emmett D. Highsmith was presented to the Fulton County Medical Society, Atlanta, recently. The bust was originally presented to Dr. Highsmith by the Georgia Power Company, with which he has been associated for many years. Dr. Highsmith is retiring from active practice on account of ill health.

District Meeting.—The First District Medical Society was recently addressed in Statesboro, among others, by Drs. Shelton P. Sanford, Savannah, on coronary thrombosis; Antonio J. Waring, Savannah, "'Chronic Cold' in Childhood," and Alfonso John Mooney Jr., Statesboro, "Atypical Signs and Symptoms in Perforated Peptic Ulcer."

State Medical Election.—Dr. Job C. Patterson, Cuthbert, was chosen president-elect of the Medical Association of Georgia at its annual convention in Atlanta April 28. Dr. William H. Myers, Savannah, was inducted as president. Vice presidents are Drs. Mark S. Dougherty Jr., Atlanta, and Amory A. Rogers, Commerce. Dr. Edgar D. Shanks, Atlanta, was reelected secretary. Savannah was chosen as the place for the 1940 session, April 23-26.

ILLINOIS

Chicago

Society News.— Dr. James B. Murphy, member of the Rockefeller Foundation for Medical Research, New York, lectured at Billings Hospital under the auspices of the Educational Association on Cancer Lectureship May 10 on "The Development of Present Trends in Cancer Research."

INDIANA

Officers of Tri-State Society.—Dr. Donald R. Brasie, Flint, Mich., was elected president of the Northern Tri-State Medical Association at its sixty-sixth annual convention at South Bend April 11, succeeding Dr. Jon N. Kelly, LaPorte. Other officers are Drs. Burt Hibbard, Lima, Ohio, vice president; E. Benjamin Gillette, Toledo, secretary, and Lyman T. Rawles, Fort Wayne, treasurer.

Society News.—At a meeting of the Indianapolis Ophthalmological and Oto-Laryngological Society March 9 Dr. Arthur W. Proetz, St. Louis, discussed "Physiology of the Nose and Its Clinical Applications."——Dr. Franklin B. Peck, Indianapolis, discussed "History of Inoculation and Vaccination Against Smallpox in the United States" before the first regular meeting of the newly organized Indiana Association of the History of Medicine May 17.——Dr. Paul L. Stier discussed "Treatment of Pneumonia with Sulfapyridine" before the Fort Wayne Medical Society April 25.——Dr. Merlen H. Draper addressed the Academy of Medicine and Surgery, Fort Wayne, April 11 on "Problems in Tuberculosis."——Dr. Marlow W. Manion, Indianapolis, was elected president of the Indiana Academy of Ophthalmology and Otolaryngology at its twenty-third annual session in Indianapolis April 5, and Dr. Edwin W. Dyar Jr., Indianapolis, secretary-treasurer.——Dr. William J. Kerr, San Francisco, discussed "Early Diagnosis of Coronary Disease" before the Indianapolis Medical Society May 11.

IOWA

State Medical Election.—Dr. Frank P. McNamara, Dubuque, was chosen president-elect of the Iowa State Medical Society at its annual meeting in Des Moines April 27 and Dr. Felix A. Hennessy, Calmar, was installed as president. Other officers of the society include Drs. Edwin A. Moore, Harlan, and Fred M. Smith, Iowa City, vice presidents; Robert L. Parker, Des Moines, secretary, and Harold J. McCoy, Des Moines, treasurer. The 1940 session will be in Des Moines May 8-10.

KANSAS

Personal.—Dr. Darrel L. Evans, Manhattan, recently resigned as health officer of Riley County.——Dr. Percy A. Petitt, Paola, has been appointed health officer of Miami County.

The Porter Lectureship in Medicine.—Homer W. Smith, Sc.D., professor of physiology, New York University, New York, gave the ninth course of lectures under the Porter lectureship in medicine, April 18-19, in Kansas City and Lawrence. His subjects were "Newer Methods of Study of Renal Function in Man"; "Evolution of the Kidney," and "Physiological Control of Renal Blood Flow."

LOUISIANA

Personal.—The Order of the Crown of Yugoslavia was recently conferred on Dr. Daniel M. Kingsley, New Orleans, for assistance given the master and crew of the Yugoslavian Steamship *Prince Andrej* who suffered from influenza while at sea.

Special Society Elections.—Dr. Henry B. Alsobrook was chosen president of the Louisiana Obstetrical and Gynecological Society recently; Dr. Paul J. Carter, vice president, and Dr. Earl C. Smith, secretary-treasurer.——At the annual meeting of the Louisiana State Pediatric Society recently in Alexandria, Dr. Philip C. De Verges was elected president; Dr. Ralph Talbot, vice president, and Dr. William C. Rivenbark, secretary-treasurer.

MARYLAND

Society News.—A symposium on bronchiectasis was presented before the Maryland Thoracic Society April 19 with the following speakers: Drs. Carroll Gardner Warner, Baltimore, Hugh J. J. Welch, Mount Wilson, Howard E. Ashbury, Waitman F. Zinn and William F. Rienhoff Jr., Baltimore.

MASSACHUSETTS

Society News.—Dr. Richard Cannon Eley, Boston, was chosen president of the New England Pediatric Society at its meeting recently; Dr. Robert M. Lord, Providence, R. I., vice president, and Dr. James Marvin Baty, Boston, secretary-treasurer.——Frank G. Young, Ph.D., research associate, National Institute for Medical Research, London, lectured at Harvard Medical School April 20 on "The Anterior Pituitary Gland and Carbohydrate Metabolism."——Dr. Ira I. Kaplan, New York, discussed "The Relation of Irradiation to Medicine" before the Greater Boston Medical Society, April 12.

State Medical Meeting in Worcester.—The Massachusetts Medical Society will hold its one hundred and fifty-eighth annual session in the Municipal Memorial Auditorium and the Hotel Bancroft, Worcester, June 6-8, under the presidency of Dr. Channing Frothingham, Boston. Among others, the following will speak:

Dr. William P. Murphy, Boston, Importance of Hypochromic Anemia.
Dr. Alexander M. Burgess, Providence, R. I., Role of Oxygen in the Treatment of Pneumonia.
Dr. Michael E. Murray Jr., Boston, Atypical Pneumonia of Unknown or Possibly Virus Etiology.
Dr. Paul A. O'Leary, Rochester, Minn., Latency and Wassermann-Fastness.
Dr. Clarence Guy Lane, Boston, Indications and Contraindications of Roentgen Rays in Dermatology.
Dr. Francis C. McDonald, Stoneham and Boston, Nonspecific Therapy.
Drs. Edward C. Curnen Jr. and John A. V. Davis, both of Boston, Specific Therapy.
Dr. John S. Coulter, Chicago, Physical Therapy in the Treatment of Fractures.
Dr. Arthur U. Desjardins, Rochester, Minn., Value of X-Ray in the Treatment of Infections and Inflammatory Conditions.
Dr. Richard B. Cattell, Boston, Obstructing Lesions of the Large Bowel.
Dr. Arthur M. Fishberg, New York, Cardiac and Circulatory Failure.
Dr. Walter C. Alvarez, Rochester, Minn., Management of the Nervous Patient.
Dr. Emil Novak, Baltimore, Endocrines and Endocrine Therapy in Gynecology.
Dr. Raymond S. Titus, Boston, A Résumé of Maternal Mortality Study in the State of Massachusetts for the Year 1938.
Dr. Frederick J. Lynch, Boston, Rupture of the Uterus.
Dr. Benjamin F. Cornwall, Salem, Obstetrical Analgesia.

Dr. Wilder G. Penfield, Montreal, will deliver the Shattuck Lecture Tuesday evening on "Epilepsy and the Cerebral Lesions of Birth and Infancy" and Dr. Elliott P. Joslin, Boston, the Annual Discourse Thursday afternoon on "The Massachusetts Medical Society and Socialized Medicine." A symposium on surgery of the stomach and duodenum will be presented Thursday morning by Drs. Chester M. Jones, Edward B. Benedict, Arthur W. Allen and Frank H. Lahey, all of Boston, and William J. Elliott, Worcester.

MICHIGAN

Changes in Health Officers.—Dr. John K. Altland, Allegan, has been appointed director of the newly created health unit in Traverse County.——Dr. Philip E. M. Bourland, Iron Mountain, has resigned as director of the Dickinson County health unit.

Obstetric Society Alters Name.—At a meeting of the Detroit Obstetrical and Gynecological Society in Detroit May 3 the society's name was changed to the Michigan Society of Obstetricians and Gynecologists. Newly chosen officers are Drs. Harry M. Nelson, president; Russell W. Alles, vice president; Howard C. Walser, secretary, and Milton A. Darling, treasurer.

Society News.—At a joint session of the Detroit Bar Association and the Wayne County Medical Society April 17 the speakers were Judge Guy A. Miller, Wayne circuit court, on "Insanity as Ground for Divorce"; William Henry Gallagher, LL.B., "Mental Capacity Necessary to Execute Wills and Other Legal Documents," and Drs. Arthur W. Frisch, Detroit, and Martin H. Hoffmann, Eloise, on "Medical-Legal Aspects of Blood Grouping" and "Insanity as a Defense" respectively.——The Michigan Society for Mental Hygiene held its third annual spring conference in Grand Rapids April 20-22; general sessions were given over to discussions of "Mental Hygiene Values in Foster Home Placements and Adoptions"; "Reality of Education in Present Day Life"; "Parental Influence in the Prevention of Crime." Among the speakers was Dr. Gregory Zilboorg, New York, on "Influence of Present Day Life on Our Children."

MINNESOTA

Sentenced for Forging Medical Prescriptions.—Harry C. Nagler, former Minneapolis pharmacist, was sentenced April 27 in the district court of Hennepin County to a prison term not to exceed five years. Nagler pleaded guilty March 27 to an information charging him with the crime of forgery in the second degree. He had forged a medical prescription using the name of "J. A. Ready, M.D." He had also forged several thousand medical prescriptions calling for whisky, alcohol and other intoxicating liquor. Eleven of the druggists, the owners of the drugstores where Nagler sold the prescriptions for sums ranging from 5 to 15 cents per prescriptions, were fined $100 each or sentenced to serve sixty days in the Minneapolis workhouse; the fines were paid. The liquor permits of these eleven stores, all expiring April 30, were not to be renewed, it was stated.

MISSISSIPPI

Society News. — The Delta Medical Society devoted its meeting in Greenville April 12 to a discussion of "What the Present Trend Toward Socialized Medicine Is Going to Do to the General Practitioner." The speakers included Drs. Ira B. Bright, and George Y. Gillespie Jr., Greenwood; Joseph G. Peeler, Shaw; Oscar E. Ringold, Cleveland; Onnie P. Myers, Indianola; James R. Jackson, Belzoni; James W. Jackson, Belzoni, and Earl T. White and Hugh A. Gamble, Greenville.

Changes in Health Officers.—Dr. James A. Sproles Jr., formerly of Jackson, has been appointed health officer of Amite County. Dr. Charles E. Catchings, Woodville, was recently named health officer of Wilkinson County to fill the unexpired term of Dr. Edwin M. Butler, Centerville, who has been appointed health officer of Union County. Dr. John W. Dorman, Holly Springs, recently was placed in charge of the Marshall County health department, succeeding Dr. Guy R. Post, who went to Clarksdale.

MISSOURI

New Committee on Industrial Health.—At the annual session of the Missouri State Medical Association, April 10-12, the following physicians were appointed to the new committee on industrial health: Drs. Edwin C. Funsch, St. Louis, chairman; John E. Castles, Kansas City; William M. Kinney, Joplin; Hyman I. Spector, St. Louis, and Gaylord T. Bloomer, St. Joseph.

Pathological Society Organized.—The St. Louis Pathological Society was recently formed with Dr. Margaret G. Smith, president; Dr. Henry Pinkerton, vice president in charge of programs, and Dr. Hollis N. Allen, secretary-treasurer. The first scientific session was to be held April 28 with the following speakers, among others: Dr. Henry W. Edmonds, malformations of the heart, and Dr. Louis H. Hempelmann Jr., a technic for differentiating mucoid material of epithelial and connective tissue origin with special reference to mixed tumors of the salivary glands.

Society News.—Dr. John S. Coulter, Chicago, discussed "The Application of Heat and Cold in the General Practice of Medicine" before the St. Louis Medical Society May 2. Dr. Forest H. Staley was the leader in the round table discussion of the society June 2; the theme was "The Present Rationale in the Treatment of Poisonous Bites." Dr. Horton R. Casparis, Nashville, Tenn., discussed "The Physicians' Responsibility in the Tuberculosis Control Problem" before the society April 18.——Dr. Nelson W. Barker, Rochester, Minn., addressed the Kansas City Academy of Medicine April 14 on "Recent Advances in Our Knowledge of Vascular Diseases."

NEW HAMPSHIRE

State Medical Meeting.—The one hundred and forty-eighth annual meeting of the New Hampshire Medical Society will be held June 8-9 at the Hotel Carpenter, Manchester, under the presidency of Dr. Clarence O. Coburn, Manchester. There will be round table conferences on medicine, surgery, pediatrics, obstetrics, diseases of the eye, birth control, anesthesia and diseases of the nose and throat. The program announces the following papers:

Dr. William G. Lennox, Boston, Treatment of Epilepsy and Migraine.
Dr. Hiram H. Merritt, Boston, Neurosyphilis and Its Treatment.
Dr. Tracy J. Putnam, Boston, Treatment of Paralysis Agitans and Athetosis.
Dr. Louis A. Buie, Rochester, Minn., Proctologic Problems of the General Practitioner and the Surgeon.
George A. Moulton, Pharm.D., Peterborough, The Development of Socialized Pharmacy in the United States.
Dr. William Wayne Babcock, Philadelphia, Clinical Phases of General Surgery.
Dr. Raymond A. Vonderlehr, Washington, D. C., Control of Syphilis.

Dr. Rock Sleyster, Wauwatosa, Wis., President of the American Medical Association, will deliver an address Friday morning on "Medical Problems of the Day" and will also speak at the banquet Friday evening.

NEW JERSEY

Public Health Week.—The Bergen County Medical Society sponsored a public health week beginning May 14 in cooperation with public health groups. Exhibits were shown at various hospitals. A meeting was held under the auspices of the woman's auxiliary to the county society in Hackensack Friday May 19 with Dr. Haven Emerson, New York, as the speaker on "Organized Care of the Sick and Public Health in Relation to 'Socialized Medicine.'" Saturday May 20 the motion picture "The Birth of a Baby" was shown in Hackensack to invited groups. The week concluded with the dedication of an "orthopedic pool" at the Bergen County Hospital, presented by the American Legion Sunday May 21.

State Medical Meeting at Atlantic City.—The one hundred and seventy-third annual meeting of the Medical Society of New Jersey will be held at Haddon Hall, Atlantic City, June 5-8 under the presidency of Dr. William J. Carrington, Atlantic City. A general public session will be held Tuesday evening June 6 with the following speakers:

Dr. Rock Sleyster, Wauwatosa, Wis., President, American Medical Association, Medical Problems of the Day.
Dr. Nathan B. Van Etten, New York, President-Elect, American Medical Association, The Doctor at the Crossroads.
Dr. Haven Emerson, New York, Governmental Planning for Health.

Among guest speakers who will address the sections are the following:

Dr. Franklin F. Snyder, Chicago, Fetal Respiration and Its Relation to Asphyxia and Pneumonia of the Newborn.
Dr. Ralph M. Tyson, Philadelphia, Cyanosis of the Newborn.
Dr. Alfred A. Strauss, Chicago, Radical Versus Conservative Surgical Procedures for Peptic Ulcer.
Dr. Yale Kneeland Jr., New York, Common Colds.
Dr. Bayard T. Horton, Rochester, Minn., Vasomotor Regulation of the Temperature of the Extremities in Health and Disease.
Dr. George P. Muller, Philadelphia, The Acute Appendicitis Problem from the Surgical Standpoint.
Dr. Martin Cohen, New York, Differential Diagnosis of Fundus Lesions Associated with Hypertensive Vascular Disease.
Dr. William Osler Abbott, Philadelphia, Treatment of Intestinal Obstruction with the Double-Barreled Intestinal Tube.
Dr. Bronson Crothers, Boston, The Pediatrician's Responsibility for the Supervision of Behavior in Children.
Dr. George G. Ornstein, New York, Pathologic Physiology of Diseases of the Lung.

The annual dinner dance in honor of the president will be held Wednesday evening June 7. The Woman's Auxiliary will have its meeting June 6-8, offering as a special feature an art, hobby and medical history exhibit.

NEW MEXICO

Personal. — Dr. John W. Myers, Albuquerque, has been appointed superintendent of the New Mexico State Hospital at Las Vegas.

Society News.—Drs. John C. Mitchell and Randolph E. Watts, Silver City, addressed the Grant County Medical Society at a meeting at Fort Bayard, March 30, on streptococcic infection and pneumonia, respectively.

NEW YORK

Pharyngitis Traced to Raw Milk.—An outbreak of streptococcic pharyngitis in Saugerties and several adjoining villages was traced to raw milk produced by one cow. The outbreak was discovered May 5 among school children in Malden and reached 502 cases before the cow was found and killed May 16. Three persons of advanced years died of the infection. The peak of the epidemic was reached on the day that the milk supply was ordered pasteurized and declined rapidly after that.

New York City

New Laboratories for DeLamar Institute of Public Health.—The new laboratories and classrooms of the DeLamar Institute of Public Health of Columbia University will occupy the top three floors of the seven story city health and teaching center nearing completion at the Presbyterian-Columbia Medical Center, 168th Street and Broadway, according to *Science*. The building has been erected through an agreement by the Presbyterian Hospital, the trustees of the university and the department of health of the city of New York. Its facilities will enable medical students at Columbia to receive practical training in public health similar to that which they receive in medicine. The laboratories and courses will also be open to physicians, dentists, nurses and graduate students. The first four floors of the building will be used by the city as headquarters for maternal care, child welfare, nursing and other public health services. The laboratories and research rooms will be so equipped that they may be used for any field of research in public health. A model classroom is situated in the southeast corner of the seventh floor. Besides being used for lectures, the room will provide opportunity for research on procedures necessary to protect the health of school children. The fifth floor will contain a laboratory designed specifically for research into diseases caused by industrial occupations and a statistical office in which a complete record of the number, kinds and occurrences of various diseases may be kept. The general laboratory for the students and research workers will be kept on the sixth floor. The seventh floor will also house an air laboratory equipped for the study of the various sources of contamination of air in public places. A

bacteriologic laboratory on the same floor will contain all the modern equipment necessary for the study of bacteriology. The offices of Dr. Haven Emerson, executive officer of the institute, and his staff will be connected with individual laboratories completely equipped with chemical, physical and bacteriologic facilities for private research. There will also be a library, a student lounge and staff accommodations. The ground floor will contain an auditorium and exhibit hall where public health education will be carried on under the direction of the institute and of the department of health.

Dr. Stockard Dies.—Charles Rupert Stockard, Ph.D., since 1911 professor of anatomy, Cornell University Medical College, died April 7 in the Hospital of the Rockefeller Institute for Medical Research of heart disease, aged 60. A native of Mississippi, Dr. Stockard graduated from Mississippi Agricultural and Mechanical College in 1899 and took his master's degree there in 1901. In 1906 he received the degree of doctor of philosophy at Columbia University. He joined the faculty of Cornell in 1906 as assistant in embryology and histology, became instructor in comparative morphology in 1908, assistant professor of embryology and experimental morphology in 1909 and professor of anatomy in 1911. In 1922 he received a medical degree from the University of Wurzburg, Germany. In 1926 he was elected to the board of scientific directors of the Rockefeller Institute and was president of the board at the time of his death. He was a trustee of the Marine Biological Laboratory, Woods Hole, Mass., the Long Island Biological Association, Cold Spring Harbor, N. Y., and the Bermuda Station for Biological Research. Dr. Stockard was managing editor of the *American Journal of Anatomy*, editor of the *Journal of Experimental Zoology* and *American Anatomical Memoirs*. In addition, he was the author of "The Origin of Blood," "Hormones and Structural Development" and "The Physical Basis of Personality," as well as of numerous contributions to scientific journals. He had served as a vice president of the American Association for the Advancement of Science, president and secretary of the American Association of Anatomists and president of the American Society of Zoologists and was a member of the National Academy of Sciences, the American Philosophical Society and the Society for Experimental Medicine and Biology. He delivered a DeLamar lecture at Johns Hopkins University, Baltimore; the Harrington Lecture, University of Buffalo; the Beaumont Lectures, Detroit; the Lane Lectures at Stanford University, Calif., and the Potter Lecture at Jefferson Medical College, Philadelphia.

OREGON

Personal.—Dr. Archie K. Higgs, Portland, was chosen by the central democratic committee of Multnomah County to succeed the late state senator George T. Eayrs.——Dr. Edward J. Dehne, Kellogg, Idaho, has been appointed health officer of Clatsop County, succeeding Dr. Lenor S. Goerke, Astoria, who has been appointed health officer of Yamhill County.

Society News.—A symposium on abortion sponsored by the Portland Academy of Obstetrics and Gynecology was presented before the Multnomah County Medical Society, Portland, April 5 by Drs. Albert Mathieu, William M. Wilson, Virgil E. Dudman and Howard C. Stearns. The Portland Academy of Pediatrics presented the program March 1 on "Acute Rheumatic Fever and Allied Disorders in Childhood," with the following speakers: Drs. Carl G. Ashley, William F. Patrick, Morris L. Bridgeman and Scott H. Goodnight.

PENNSYLVANIA

Society News.—Dr. Emil Novak, Baltimore, was the guest speaker before the Dauphin County Medical Society, Harrisburg, May 2 on "Female Sex Hormones."——Dr. Edward L. Bortz, Philadelphia, addressed the Harrisburg Academy of Medicine May 16 on "Diabetes and Other Nutritional Diseases."——Dr. Robert L. Hickok, Scranton, was recently elected full time business manager of the bulletin of the Lackawanna County Medical Society.——Medical and surgical clinics were conducted by Drs. William J. Fetter, assistant professor of medicine, and John P. Griffith, professor and chairman of the department of surgery, University of Pittsburgh School of Medicine, at a meeting of the Cambria County Medical Society, Johnstown, May 11.——The annual clinic of the Westmoreland County Medical Society was held at Torrance State Hospital, Torrance, May 12, with Drs. Emil Novak, associate professor of obstetrics, and Maurice C. Pincoffs, professor of medicine, University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, as guests.

Philadelphia

Personal.—Dr. Wilmer Krusen, formerly director of public health of Philadelphia, was recently reelected president of the Philadelphia College of Pharmacy and Science for the thirteenth time.——Dr. Richard Weissenberg, formerly professor extraordinarius of anatomy, University of Berlin, and during 1937 visiting professor of cytology, Washington University School of Medicine, St. Louis, has been appointed a member of the Wistar Institute of Anatomy and Biology.——Dr. Arthur C. Morgan was honored recently at a testimonial dinner by the executive committee of the Medical Alumni Association of the old Medico-Chirurgical College, the last class of which was graduated in 1916. Dr. Morgan received a book of resolutions containing 706 signatures of alumni of the college. Dr. Charles Howard Moore, president of the association, made the presentation.

Society News.—Drs. Max B. Lurie and John Paterson, among others, addressed the Laennec Society of Philadelphia, April 25, on "Inherited Resistance in Experimental Tuberculosis" and "Pulmonary Tuberculosis in Married Couples" respectively.——Drs. Paul Sloane and James S. Dean addressed the Philadelphia Neurological Society April 28 on "Radicular Syndrome Associated with Mediastinal Tumors" and "The Cerebrospinal Fluid Protein" respectively.——At a meeting of the Philadelphia Academy of Surgery May 1 the speakers were Drs. DeForest P. Willard and Jesse T. Nicholson, on "Fracture-Dislocations of the Odontoid and First Cervical Vertebra"; Drs. Joseph R. Elkinton and Monroe T. Gilmour and W. A. Wolff, Ph.D., on "Physiochemical Determinations in the Management of Surgical Patients."——Dr. Claude S. Beck, Cleveland, delivered a Mary Scott Newbold Lecture before the College of Physicians of Philadelphia April 5 on "The Surgical Approach to Diseases of the Heart."——Dr. Chevalier Jackson addressed the Philadelphia Pediatric Society April 11 on "Acute Tracheobronchitis."——Dr. Esmond R. Long addressed the Pathological Society of Philadelphia April 14 on "The Accepted and the Disputed in the Pathology of Pulmonary Tuberculosis."

RHODE ISLAND

State Medical Meeting in Providence.—The one hundred and twenty-eighth annual meeting of the Rhode Island Medical Society will be held in Providence June 7-8 under the presidency of Dr. Edward S. Brackett, Providence. Mornings will be devoted to clinics and demonstrations at the Charles V. Chapin, St. Joseph's, Rhode Island and Miriam hospitals and afternoons to programs at the Rhode Island Medical Library. Speakers will be:

Dr. Marshall N. Fulton, Boston, Aneurysm and Rupture of the Ventricle of the Heart.
Edgar Allen, Ph.D., New Haven, Conn., Evidence from Experiments with Ovarian Hormones in Monkeys and Applications to Conditions in Women.
William C. Young, Ph.D., Providence, Ovum and Spermatozoon Age at the Time of Fertilization and the Course of Gestation and Development in Lower Animals.
Dr. Arthur T. Hertig, Boston, Pathologic Aspects of Spontaneous Abortion.
Dr. Elliott C. Cutler, Boston, Selection of Patients for Surgery.
Dr. Soma Weiss, Boston, Circulatory Collapse and Shock.
Dr. Perrin H. Long, Baltimore, Use of Sulfapyridine in Treatment of Pneumococcal Infections.
Dr. Edward Delos Churchill, Boston, Primary Carcinoma of the Lung.
Drs. Herman C. Pitts and George W. Waterman, Providence, Treatment of Carcinoma of the Cervix: Report on 135 Additional Cases with Five Year Results.
Drs. Albert H. Miller, Meyer Saklad and John A. Hayward, Providence, Symposium on Anesthesia.

The annual dinner will be held at the Pomham Club Thursday evening with Dr. Reginald Fitz, Wade professor of medicine, Boston University School of Medicine, as the guest speaker.

VIRGINIA

Personal.—Dr. Thomas E. Painter, assistant physician at the Eastern State Hospital, Williamsburg, has been appointed clinical director of the hospital.——A soft ball diamond in the state fair grounds was recently named in honor of Dr. William H. Parker, Richmond. The field was officially dedicated at the opening league game in April at which time Dr. Parker was guest of honor.

New Committee on Industrial Health.—The Medical Society of Virginia has appointed a committee on industrial health with the following members: Drs. Fred J. Wampler, Richmond, chairman; William D. Tillson, Richmond, and Horace T. Hawkins, Waynesboro.

WEST VIRGINIA

New Marriage Law in Effect.—A law requiring a physical examination and a blood test for syphilis of all applicants for marriage licenses went into effect in West Virginia May 26. The serologic test and the laboratory in which it is performed must be approved by the state department of health and the test must be made within thirty days before the marriage. The laboratory is to make two reports to the physicians: one stating the exact result of the test, the other stating the name of the test, the date and the name and address of the persons tested but not the result. Plans are now being worked out whereby laboratories will be approved for this work.

WISCONSIN

Society News.—Dr. Forrester Raine, Milwaukee, addressed the La Crosse County Medical Society, La Crosse, May 9 on "Water Metabolism."——Dr. Mynie G. Peterman, Milwaukee, recently addressed the Fond du Lac County Medical Society on "Convulsions in Childhood."——Dr. Siegfried F. Strauss, Chicago, addressed the Rock County Medical Society, Beloit, April 25 on "Subtotal Gastrectomy for Gastric and Duodenal Ulcer and Surgery of the Colon."——At a meeting of the Racine County Medical Society, Racine, April 20 the speakers were Drs. Philip Thorek, Chicago, and Jerrold Peerman Nesselrod, Evanston, Ill., on "Intestinal Obstruction" and "Anorectal Conditions" respectively.—— Drs. Leo A. Hilger and Alexander R. Colvin, St. Paul, addressed the Pierre-St. Croix Counties Medical Society, Baldwin, recently on fractures of the hip.—— Drs. John E. Gonce Jr. and John W. Harris, Madison, addressed the Oneida-Vilas County Medical Society, Rhinelander, May 11 on "Diseases of Early Infancy" and "Occiput Posterior Arrests" respectively.——The Milwaukee Neuro-Psychiatric Society went to Madison for its meeting May 4. The speakers were Drs. William F. Lorenz, on "A Rapid Flocculation Test for Syphilis Adapted to Cerebrospinal Fluid"; Helen E. P. Davis, "Anorexia Nervosa," and Mabel G. Masten, "Neurologic Complications of Chickenpox." Dr. Joseph Pessin reported a case of catatonic-like behavior in a 4 year old girl, with moving pictures, and Dr. Frank O. Meister demonstrated neuropathologic slides in color.

GENERAL

American Orthopaedic Association.—The annual meeting of the American Orthopaedic Association will be held in Buffalo, N. Y., June 5-8 at the Hotel Statler. Two sessions will be devoted to symposiums on acute hematogenous osteomyelitis and on fractures of the shaft of the femur. In addition, the program will include addresses by the following:

Drs. John G. Kuhns and Louis Nathan, Boston, Epiphysitis of the Spine.
Dr. Harold H. Hitchcock, Oakland, Calif., Spondylolisthesis.
Dr. William E. Gallie, Toronto, Canada, Ununited Fracture of the Neck of the Femur Treated by Combining the Smith-Petersen Nail and Bone Graft Without Opening the Hip Joint.
Dr. Marius N. Smith-Petersen, Boston, A New Approach to the Wrist Joint.
Dr. Cly Howard Hatcher, Chicago, End-Results of Epiphysial Arrests Operations.
Drs. Kellogg Speed and Egbert H. Fell, Chicago, Temperature Controlled Healing of Experimental Fractures.
Dr. Louis C. Kress, Buffalo, Malignant Disease.

American Ophthalmological Society.—The seventy-fifth annual meeting of the American Ophthalmological Society will be held at The Homestead, Hot Springs, Va., June 5-7 under the presidency of Dr. Frederick T. Tooke, Montreal. The program will include the following addresses:

Dr. Arthur M. Yudkin and Harriet A. Geer, Ph.D., New Haven, Conn., An Investigation of Experimental Cataracts in the Albino Rat —Clinical Implications.
Dr. Mark J. Schoenberg, New York, Psychosomatic Relationships—Therapeutic Implications for Patients with Glaucoma.
Mr. H. M. Traquair, Edinburgh, Scotland, Some Problems in Perimetry.
Dr. Alexander E. MacDonald, Toronto, Can., Six Cases of Lindau's Disease—Four Verified and Living.
Dr. Frederick A. Davis, Madison, Wis., Plexiform Neurofibromatosis (von Recklinghausen's Disease) of the Orbit and Globe.
Dr. Edward Jackson, Denver, Medical Ophthalmology.
Dr. Arnold Knapp, New York, The Course of Certain Cases of Optic Atrophy with Cupping and Low Tension.
Drs. Jonas S. Friedenwald and Wilhelm Buschke, and Harry O. Michel, Ph.D., Baltimore, The Role of Ascorbic Acid in the Mechanism of Secretion of the Intraocular Fluid.
Dr. Frederick H. Verhoeff, Boston, Hyperphoria Tests Based on a New Principle.
Drs. Phillip Robb McDonald and Francis H. Adler, Philadelphia, The Effect of Anoxemia on Dark Adaptation in the Normal and Vitamin A Deficient Person.
Drs. Henry P. Wagener and Paul L. Cusick, Rochester, Minn., The Retina in Surgically Treated Cases of Primary Hypertension.
Dr. Phillips Thygeson, New York, Treatment of Trachoma with Sulfanilamide.

Tuesday evening June 6 a banquet celebrating the seventy-fifth anniversary will be held with Dr. Harry Friedenwald, Baltimore, Mr. Traquair and Dr. Bernard Samuels, New York, as speakers.

Industrial Physicians' and Surgeons' Meeting.—The American Association of Industrial Physicians and Surgeons and the American Conference on Occupational Diseases and Industrial Hygiene will hold their annual meeting in Cleveland June 5-8 at the Hotel Statler under the presidency of Dr. Clarence D. Selby, Detroit. Among addresses to be delivered are:

Dr. Royd R. Sayers, U. S. Public Health Service, Washington, D. C., Health of Workers.
David B. Dill, Ph.D., Arlington, Mass., Fatigue in Industry.
Dr. Sumner L. S. Koch, Chicago, Tendon and Nerve Suture.
Dr. Donald M. Glover, Cleveland, Plastic Surgery in Relation to Industrial Injuries.
Dr. Henry H. Kessler, Newark, N. J., Operative Problems in Rehabilitation of the Injured.
Dr. John S. Coulter, Chicago, Physiotherapy Problems in Rehabilitation of the Injured.

The Knudsen Award to the physician judged to have made the outstanding contribution to industrial medicine during the year will be presented by the donor, Mr. W. S. Knudsen, president of the General Motors Corporation, at the annual banquet Wednesday evening June 7.

American Neurologic Meeting.—The sixty-fifth annual meeting of the American Neurological Association will be held in Atlantic City June 5-7 under the presidency of Dr. Williams B. Cadwalader, Philadelphia. There will be a symposium on virus disease and the central nervous system presented by Drs. Albert B. Sabin, New York, who will discuss "The Mode of Entry and Spread of Viruses in the Central Nervous System"; Howard A. Howe, Baltimore, "The Problem of Virus Infection in Poliomyelitis"; Leroy D. Fothergill, Boston, "Equine Encephalomyelitis in Man"; Joseph E. Smadel, New York, "The Use of the Complement-Fixation Test in the Diagnosis of Lymphocytic Choriomeningitis." Other speakers include:

Drs. Ernest Sachs and Henry G. Schwartz and Alan S. Kerr, St. Louis. Electrical Activity of the Exposed Human Brain.
Drs. William G. Lennox, Frederick A. Gibbs and E. L. Gibbs, Boston, The Inheritance of Epilepsy as Revealed by the Electroencephalograph.
Drs. Loyal Davis and John Martin, Chicago, The Result of Experimental Removal of the Pineal Gland.
Curt P. Richter, Ph.D., Baltimore, Transmission of Taste Sensation in Animals.
Drs. Francis C. Grant, Lawrence M. Weinberger and John H. Gibbon, Philadelphia, Anoxemia of the Central Nervous System Produced by Temporary Complete Arrest of the Circulation.
Drs. Lewis D. Stevenson, Anna M. Allen and Lillian E. McGowan, New York, A Study of the Brain Changes in Alcoholism.
Drs. James S. Robertson, Glasgow, Scotland, and Arthur E. Childe, Montreal, Can., Ventricular Asymmetry in Relation to Contracting Intracranial Lesions.
Drs. Wilder G. Penfield and Storer P. Humphreys, Montreal, Epileptogenic Lesions of the Brain: A Histologic Study.
Dr. Samuel D. Ingham, Los Angeles, The Neural Basis of Knowledge and the Synthesis of Concepts.
Drs. John McDowell McKinney and Maurice Frocht, New York, Seven Cases of Adie's Syndrome with Moving Picture Demonstration.

National Tuberculosis Association.—The thirty-fifth annual meeting of the National Tuberculosis Association will be held in Boston June 26-29, with headquarters at the Hotel Statler. The opening general meeting will be held Monday evening June 26, when Dr. Henry Chesley Bush, Livermore, Calif., will deliver his presidential address and the Trudeau Medal will be awarded. At a joint session of the pathologic and clinical sections there will be symposiums on (1) genitourinary tuberculosis, presented by Drs. Oscar Auerbach, Staten Island, N. Y., and Gilbert J. Thomas, Minneapolis; (2) spinal tuberculosis, Drs. Theodore A. Willis, Cleveland, and Mather Cleveland, New York, and (3) atelectasis, Drs. Max Pinner, New York, and Edward N. Packard, Saranac Lake, N. Y. There will also be a joint symposium on "Mass Tuberculin Testing and X-Raying" before the pathologic, clinical, social work and administrative sections by Drs. Esmond R. Long, Philadelphia; Bruce H. Douglas, Detroit, and James A. Doull, Cleveland. Among other speakers will be:

Dr. Harry J. Corper and Maurice L. Cohn, Ph.D., Denver, Phases of Intoxication in Tuberculosis.
Drs. Andre Cournand and Dickinson W. Richards Jr., New York, Pulmonary Function in Pulmonary Tuberculosis Under Various Forms of Collapse Therapy.
Dr. Moses J. Stone, Boston, Clinical Studies of Asbestosis.
Clair E. Turner, Dr.P.H., Cambridge, Mass., Training of Health Educators.
Dr. Herman E. Hilleboe, St. Paul, How Many Tuberculosis Patients Survive?

Medical clinics have been arranged for Wednesday afternoon June 28 at Boston City Hospital, Massachusetts General Hospital, Middlesex County Sanatorium, New England Deaconess and Peter Bent Brigham hospitals. Clinics on topics for lay workers have also been arranged.

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 6, 1939.

Gas Masks in the Operating Room

The menace of poison gas has led to extraordinary precautions, such as the providing of gas masks specially made for babies. The latest contingency to be considered is the presence of the surgeon in the operating room. In a communication to the *British Medical Journal* (April 29, page 897) the surgeon Mr. J. S. Rowlands asks "Have surgeons considered the possibility of wearing gas masks during operation?" He endeavored to do this and planned a rehearsal at his hospital with the entire operating room staff wearing gas masks but gave up the idea and wore the mask alone during an operation for disarticulation at the cubometatarsal joint. When he donned the mask he was confronted with a series of problems. The coarser part of the operation, the disarticulation, was accomplished, but when it came to the finer points he was compelled to discard the mask. He found the mask entirely unsuited for this work. He therefore suggests that the Royal College of Surgeons and the Association of Anaesthetists should appoint a committee to discuss the problem and give guidance for a highly probable contingency. Hospitals with operating rooms on the ground level will be particularly concerned. In an editorial note the *British Medical Journal* states that, if it were possible for the surgeon and his assistants to operate in gas masks on a patient wearing a gas mask, the choice of an anesthetic would be limited.

The subject has already been discussed on the European continent. Von Fehr (*Schweiz. med. Wchnschr.* **69**:347 [April 15] 1939) suggests that the surgeon should learn to work in a gas mask, just as the soldier has to do. The *Lancet* states that the army surgeon Colonel Cowell successfully completed an appendectomy wearing a gas mask. The haversack hung over his back instead of in front and the sterilized overall was tied loosely so as to allow the entry of air. There was no difficulty as to comfort, visibility or efficiency.

Scientists in Wartime

H. G. J. Moseley worked for four years with Rutherford and at the age of 26 completed a research which the American physicist R. A. Millikan described as "destined to rank as one of the most brilliant in the history of science. He threw open the windows through which we can glimpse the subatomic world with a definiteness and a certainty never dreamt of before." He was killed in the war at the Dardanelles at the age of 27. Physicists regard this as a disaster which deprived the world of the natural successor to Rutherford. The loss to his country far outweighed any services he could have performed in the war. It is felt that if another war occurs such loss of scientific ability should as far as possible be avoided. The Royal Society has therefore prepared for the government a register of scientists engaged in or qualified for research. The work has been done by a committee under the chairmanship of the physiologist A. V. Hill. There are ten subcommittees, of which some of the chairmen are Dr. C. G. Darwin (mathematics), Dr. E. V. Appleton (physics) and Prof. D. M. S. Watson (zoology). Scientists invited to join the register receive a classification table of seventy-seven sciences and two registration cards. The scientist gives the science in which he is best qualified first place on the card and then names the other subjects in the order of his competence. A curious fact is that young scientists put down a considerable range of subjects. One man aged 22 entered as many as eighteen. But older men give only a few. Registration carried the obligation of the scientist to place his services at the disposal of the government in the event of war. It is thus hoped that the scientific ability of the country will be better employed than in the earlier years of the late war.

The Evacuation of Cities in Case of War

The following are further particulars of the arrangements made by the government for the removal of the inhabitants of cities from the peril of air attack. A billeting survey has shown that accommodation can be found for 5,000,000 persons in the country. The government is arranging for the movement of 3,000,000 without interfering with another 1,000,000 who have reserved accommodations for themselves under private arrangements. The 3,000,000 include 2,500,000 children, who would be moved at the rate of 1,000,000 a day. When the official movement begins, absolute priority in all rail and road traffic will be given to the children and those in charge of them. Persons who propose to move privately are therefore advised to leave well in advance of an emergency, even at the risk of a wasted journey. The government will not be able to advise them. Precise timetables and destinations are now being worked out in detail. Special provision is to be made for expectant mothers. Any mother who already has one child under 5 years of age will automatically be moved with her children. A large number of nurses, now being recruited and registered by the Central Emergency Committee, will be available in the reception areas for welfare work and nursing the sick.

The Storage of Radium in Wartime

The secretary of the National Radium Commission points out in a letter to the press that if any quantity of radium was dispersed by violence during an air raid, the buildings in which it was dispersed, as well as the surrounding area, would for many years be a menace to the people who inhabited them. The inhalation of 0.01 mg. would probably be fatal. It is therefore necessary that steps be taken to provide for the safe custody of radium in wartime. For this purpose a conference has been held between representatives of the British X-Ray and Radium Protection Committee, King Edward's Hospital Fund for London, the Ministry of Health and the National Radium Commission. The last is compiling a list of owners and holders of radium with a view to satisfactory arrangements being made. All who have the custody of radium are requested to notify the commission and state the amount.

PARIS

(From Our Special Correspondent)

April 29, 1939.

Cardiosurgery

At a session of the Société de médecine of Paris devoted to omentopexy, Dr. O'Shaughnessy of London explained his grafting technic of revascularization of the heart; an interesting colored film accompanied his communication. One of the problems of omentopexy is the reality of the new anastomoses which are supposed to be established between the myocardium, ischemic as a result of coronary insufficiency, and the epiploic or muscular graft. Of the four solutions having as a basis the cardiac graft, i. e., graft of the pectoral muscle, graft of the lung, graft of the omentum and production of pericardiac adhesions vascularized by irritation of the pericardium, O'Shaughnessy has chosen omentopexy, or grafting of the omentum. He used this method, the technic of which is in reality rather simple though demanding great surgical dexterity, with twenty patients, whose condition was sufficiently grave to justify an operation so new and so audacious, and he gives as proof of his prudence in this respect the fact that several of his patients were in such a grave condition that they died before they could be operated on.

Fifteen of the twenty patients had angina pectoris and five had symptoms of cardiac ischemia. In the first group, five of those who were operated on died, one in the course of the operation, another of uremia three months later and three of heart failure two years later. All the survivors recovered completely. In the second group none died. The operative risks do not seem to be greater than the risks inherent in the future of seriously affected patients. O'Shaughnessy presented anatomic specimens and microscopic plates which demonstrated the reality of the formation of new vessels between the graft and the myocardium.

The indications for this operation are not yet fixed with precision. Cardiac failure due to hypertension and aneurysms of the heart are among the most clearcut.

According to Heim de Balsac, who succeeded the English surgeon on the rostrum, the indications for omentopexy are derived rather from the ischemia caused by coronaritis than from the anginal pain, which is not always of ischemic origin whereas the numerous types of coronaritis are not all painful.

It may be recalled that for two years O'Shaughnessy tried the same ideas in the surgical treatment of renal sclerosis, by fixing to the decapsulated kidney an epiploic graft. Abrami and Iselin have just reported in the *Presse médicale* two new attempts of this kind, which have given satisfactory results.

Anatoxin

Nélis, presenting before the Académie de médecine recent statistics on vaccination with anatoxin in Belgium, declared that vaccination with anatoxin was rather timidly attempted in 1924 and met with growing success. On the basis of the quantity of vaccine used in 1929, allowing 15 per cent for loss, it has been calculated that at least 330,000 children have been vaccinated with anatoxin. This means 33,000 children a year, or 14 per cent of Belgian children between the ages of 1 and 15 years. However, this seems to represent a small proportion.

The anatoxin used in Belgium is supplied for the most part by the Pasteur Institute of Brussels; the rest is supplied, with few exceptions, by the Pasteur Institute of Paris. The two products are identical in composition and value. The anatoxin is subjected to triple official control as to sterility, innocuousness and antigenic unit contents in every case. The conclusions of Nélis are explicit; among 330,000 vaccinated children not one serious complication was observed in spite of the different controls by the bureaus of hygiene.

Prophylaxis of Malaria

In the northern part of French Indo-China there are enormous plantations of hevea where malaria is endemic. The marshy character of the land favors the breeding of Anopheles, and the way of living of the coolies makes them particularly vulnerable.

The fight against malaria was first carried on with quinine, to which were added, on the instigation of the Pasteur Institute, synthetic medicines, such as atabrine and "praequine." In certain regions, prophylaxis was brought about with these drugs alone.

The semimilitary regimen to which workers on hevea plantations are subjected in these regions permitted accurate control of the treatment and of the malarial indexes, and these precise conditions for experiments prompted Canet to report before the Société de pathologie exotique his ideas for the complete and final eradication of malaria. He concluded that it was not possible to attain such eradication solely by medication, even with synthetic antimalaria medicines, on account of the frequency of reinfections, the persistence of the reservoirs of the virus and the quickly reached limit of the effect of the drug.

Synthetic medicines are excellent temporary remedies, especially in an epidemic; however, definite measures have to be added, like drainage of stagnant waters, amelioration of social conditions and strict control of the infected.

The atabrine of the Pasteur Institute, at the optimal dose of 0.3 Gm., is capable, nevertheless, of subduing rapidly the periodic or exceptional attack. Moreover, it is taken more readily by the natives than quinine. Its administration is subjected to epidemiologic and geographic considerations particular to each case.

Deaths

Prof. Prosper Merklen, a teacher of clinical medicine at the Faculty of Medicine of Strasbourg, is dead. He was a pupil of Widal, and he wrote important articles, especially on heart disease. His ancestors came from Alsace, and when Alsace was returned to France after the World War he finished his medical studies at the Faculty of Medicine of Strasbourg. He was a dean of the faculty until 1933, when he retired.

Victor Pachon died recently at the age of 70. With his youthful days ardently devoted to work, often under distressing material conditions, he merited the professorship of physiology at the Medical Faculty of the University of Bordeaux by his genius for experimentation. He laid down the notion of oscillometry, and the term a pachon is used in France to designate the oscillometer, which became indispensable in medical practice.

BERLIN

(From Our Regular Correspondent)

April 10, 1939.

Stimulants Endanger Public Health

At the beginning of March a governmental convention on public health and the use of stimulants was held in Frankfort on the Main, convoked by the central department on public health in conjunction with the bureau of the reich against the misuse of alcohol and tobacco. The purpose of the meeting, attended by about 15,000 persons, was to discuss the increasing consumption of alcohol and tobacco with the consequent increased outlay (more than 7 billion marks in 1938). It was stressed that to allow this situation to continue was to endanger public health. Neither abstinence nor prohibition was envisaged. According to the principles of the national socialist party the adult may choose between abstinence and temperance; youths, however, are expected to abstain. The aim must be to curtail the increase in the use of these stimulants within a reasonable time.

The Berlin surgeon Professor Sauerbruch, substitute speaker for the leader of physicians of the reich (reichsärzteführer), made no new contributions to the subject. He said that the speculative philosophy of idealism had for a long time led to an underestimation of all biologic processes and that the national socialist party must be credited with bringing about the conception of the organic relation between the physical and the mental. It was his concern, he said, as a university teacher and educator of future physicians, to develop a medical group that warm-heartedly and with open eyes would welcome the new order. Dr. Ley, director of organization for the reich, who had had full charge both of the planning and of the conduct of this meeting, expressed himself in favor of complete abstinence. He was convinced from personal experience that temperance in the long run would fail. Five years ago, he said, he had to face the choice of giving the best service or allowing stimulants gradually to impair his efficiency. He associated the potential efficiency of old age with the use of alcohol and tobacco, having in mind habitual small uses, not excessive indulgence. The objective must be not to retire on a pension after a certain age but to be able to work when 80 years old. He branded the assertion that the ancient Germans had been topers a fiction created by their archenemies the Romans. Moderns would call the mead they drank fruit juice.

The president of the governmental department of public health announced that all medical societies of the nation had been requested, in conjunction with the proper institutions, to determine scientifically whether and to what extent the use of tobacco stood in any causal relation to diseases. A representative from the governmental office of race and politics referred to well known drinking bouts (kommers) characteristic of German student clubs as "collective compulsion" of oriental origin. Simultaneously with this meeting a conference of educators was held in which emphasis was laid on the fact that abstention from stimulants was a matter not of prohibition but of education. The misuse of tobacco and alcohol was brought into close connection with the "liberalism" of the times preceding the Nazi régime.

In connection with this conference perhaps some data recently published by the governmental department of statistics may be of interest. The records indicating the use of numerous stimulants in Germany extend over a period of sixty years and show a surprising constancy. For example, the use of coffee since 1878, with some fluctuations, has remained nearly at the same level (1878, 2.25 Kg. annually per capita; 1936, 2.31 Kg.). The consumption of tea for the same period, with a slow upward trend, doubled (0.03 Kg. to 0.07 Kg.) but does not have an important role in Germany as compared with its fifty times greater consumption in England. The use of alcoholic beverages has fallen off considerably, although it has risen since 1933. The statistics are shown in table 1.

TABLE 1.—*Annual per Capita Consumption of Alcoholic Beverages and Tobacco*

Year	Beer, Liter	Alcohol, Liter	Tobacco, Kg.
1878.....	82.4	....	2.73
1900.....	117.9	5.33 (in 1907)	1.56
1913.....	102.1	2.56	1.56
1925.....	75.4	1.04	1.69
1929.....	90.0	0.75	1.98
1933.....	52.0	0.86	1.80
1936.....	58.8	1.00	1.78

This upward trend reflects partly the changes in the age level of the population, the number of adults having increased with increasing longevity. However, the highest postwar statistics in the case of coffee, wine and alcohol have been surpassed and in the case of tobacco almost reached. Likewise the increased consumption of beer is unmistakable. Full statistics are shown in table 2.

TABLE 2.—*Annual Consumption per Adult (Kg. or Liter)*

	1913	1929	1933	1936	1937
Tobacco	4.8	5.4	4.7	4.8	4.9
Beer	154.0	116.0	69.0	77.0	83.0
Alcohol	4.2	1.8	1.0	1.3	1.4
Wine	5.1	6.1	4.7	8.8	8.9
Coffee	2.4	2.2	1.8	2.1	2.4
Tea	0.1	0.1	0.1	0.1	0.1

Race and Heredity

Regarding race selection according to purpose, Dr. Gross, director of the department of race and politics, recently expressed himself in the *Will of the People,* organ of the National Society of Large Families. The criteria of national race culture and selection differ according to the purpose for which selection in each case is made. As a criterion for proving one's worth in life one must require that the mental power of the men be sufficient for the discharge of military duty, especially for the severe demands of the highly developed modern military system, and that of the women for rearing useful children. For general purposes, the writer says, absence of serious defects is sufficient for most leading professions and positions. Greater racial and hereditary qualifications, however, will be demanded of military officers, party leaders and farmers. Racial selection consciously pursued rejects many persons, but all kinds of other possibilities are open to them in the life of the nation. In every case race and heredity must be considered from the point of view of the purpose for which the examination and selection are made.

According to a new law, persons who appear in court in disputes over family rights will be subjected to hereditary and racial investigations, so far as this is necessary to determine the descent of the child. These can be ordered also in other cases, for example in criminal actions for violation of the "law for the protection of German blood and honor" (that is, of social intercourse between Aryans and Jews). Such investigations, as the minister of justice pointed out, do not yield reliable results until the child is about 2 years old. In certain circumstances the governmental bureau of genealogy should be brought into the picture to make a thorough study, especially when descent from German blood is justifiably questioned.

On heredity and education an influential member of the bureau of race and politics who likewise represents the government department of education in matters of this kind expressed himself to the effect that one must not conclude, in view of our present knowledge on racial matters, that education is now replaced by hereditary destiny and no longer necessary. To be sure, he said, it is impossible to modify inherited traits by environment and to exercise an educational influence on race, yet the important thing is to develop the abilities latent in the individual and in the race. This can be done by environment. Environment can discover and promote or dwarf and stunt. The motto must therefore be "Heredity and environment."

AUSTRALIA

(From Our Regular Correspondent)

April 26, 1939.

National Health Insurance Fades Out

The political crisis occasioned by the sudden death of the prime minister, Mr. J. A. Lyons, has definitely sealed the doom of national health insurance in Australia. For some time it has been evident that the government wished to abandon the act placed on the statute book last year. But, national insurance being one of the main points of governmental policy on which the last election was won, such action would have required considerable courage, in spite of the almost national feeling against the act, which the government, in an already precarious position, has felt unprepared to meet. The issue was heatedly debated in the cabinet a few weeks ago. It was finally decided that, rather than abandon the whole of the National Health and Pensions Insurance Act, it should be replaced by a less comprehensive health scheme. This proposed scheme covers a smaller number of persons, they are asked to pay a smaller contribution, and the benefits to be gained are fewer. On the other hand, the scheme is to include dependents, so that, while the original 1,850,000 insured are reduced to 1,500,000, the addition of dependents raises the number eligible for medical attention to 3,000,000. Whether the lower revenue from insured contributors, the increase in the number of persons who are to receive treatment and the necessary increase in the payment of physicians to compensate for the almost total destruction of private practice are mutually compatible is apparently a moot point.

This alternate proposal was introduced only at the expense of the resignation of the attorney general, Mr. A. R. Menzies. Now Mr. Menzies has been recalled to assume prime ministership, and a new cabinet has been formed under his leadership. It is doubtful, however, whether this shift of power will be responsible for any significant change in the attitude toward

insurance. The rising noise of the drums of war becomes so insistent that national insurance will probably fade into oblivion behind the strident overtones of the question of defense. However, until parliament meets it is not possible to foretell what will be the fate of the present act. A mutilated section of the original may survive or it may be killed entirely, but even total repeal will not dispose of the matter finally. In effect it is only indefinite postponement. Sooner or later some form of national health insurance is inevitable.

Poliomyelitis

In 1937, during an epidemic of poliomyelitis in South Australia, it was observed that, of a number of children affected in a city where immunization against diphtheria had been carried out quite recently, the majority had not been immunized. Immunization had been carried out without previous Schick testing. Further investigation by W. G. Heaslip of Adelaide supported this observation. Patients with poliomyelitis and controls were subjected to the Schick test, and the 1917 finding of Zingher that a disproportionately large percentage of patients with poliomyelitis give a positive reaction to the Schick test was confirmed. From this and other observations it appears that a positive correlation exists between susceptibility to diphtheria and to poliomyelitis. Heaslip suggests that this relationship probably (*a*) is not confined to these two diseases and (*b*) has a constitutional defect underlying it.

VITAMIN C NUTRITION AND PROPHYLAXIS

Heaslip has also considered the relation of vitamin C nutrition to susceptibility to diphtheria and to poliomyelitis. The urinary excretion of vitamin C in various groups of infected and noninfected persons was estimated and a relation demonstrated between the infectious state and the value obtained. It has been shown that, while usually there is a decrease in the excretion of vitamin C following infection, it is probable that a low level of vitamin C and poor vitamin nutrition generally predispose to infection and severity of attack.

Kenny Treatment of Orthopedic Conditions

In a previous letter (THE JOURNAL, March 19, 1938, page 910), comment was made on a "new" system of treating long-standing infantile paralysis and other orthopedic conditions, devised by Sister Elizabeth Kenny and first practiced in Queensland. By her optimistic claims of cure, Miss Kenny soon roused public opinion and medical interest. At that time the report had just been issued of a royal commission appointed in Queensland to investigate her method as outlined in her textbook "Infantile Paralysis and Cerebral Diplegia." A terse medical criticism of her book was that "there was much in it both good and new. Unfortunately that which was good was not new, and that which was new was not good."

The report has now come to hand of a committee appointed by the London County Council to investigate her method of treatment as demonstrated at her clinic attached to Queen Mary's Hospital, Carshalton. The findings of this committee are similar to those of the Queensland commission, and the main conclusions are as follows:

1. There is no reason to admit that Miss Kenny's claim of complete cure can be promised in any group of cases of poliomyelitis.

2. The use of hydrotherapy in the form of hot and cold douches as practiced by Miss Kenny is of value.

3. Very early attempts to initiate voluntary movements and also early and frequent passive movements are harmless but of unproved value.

4. The committee agrees with Miss Kenny that under certain specified conditions splints can be dispensed with in the treatment of the disease in its early stages. It does not approve, however, of her entire abolition of splints and surgical appliances in treatment, as these are considered to be often valuable and sometimes essential parts of the treatment. On the other hand, the mechanical methods employed by Miss Kenny in substitution for splints are considered inadequate.

5. Miss Kenny has not really faced the issue of residual paralysis, for which surgical appliances or surgical methods, such as stabilizing operations, offer the only eventual hope of amelioration.

6. Some improvement appears to have been achieved in cases of cerebral spastic paralysis, but Miss Kenny's system in these cases demonstrated no original principles.

BUENOS AIRES

(From Our Regular Correspondent)

April 30, 1939.

Earthquake in Chile

In the violent earthquake which shook many Chilean areas into ruins, the most damaged towns were Chillán, Cauquenes and Concepción. Argentina sent immediately, by airplane, antitetanus and antigangrene serum. Material for installing an orthopedic hospital with 300 beds was sent by train. The hospital was installed in Santiago in charge of Drs. Denis, Ottolenghi, Allende and twelve assistant Argentine surgeons. During the first forty-eight hours more than 200 fractures, of which most were fractures of the spine and some were fractures of the cranium, were given attention in the hospital. Equipment for the disinfection of drinking water and for transfusion, as well as 50,000 liters of naphtha for aviation purposes, was also sent. The Chilean authorities worked constantly for good sanitary conditions in order to prevent epidemics. All donations made by Argentina were turned over to the Chilean medical body, which is large and very competent. Donations of economical resources, clothes and mattresses seemed to be more necessary for the time being than medical aid. Argentina sent donations of about 2,000,000 Argentine pesos ($500,000). Because of the five modern systems of transportation, much help from many lands was available and speedily given.

New Building of the Faculty of Medicine

The president of Argentina, in a decree of Nov. 16, 1938, allowed 16,847,680 Argentine pesos (about $5,000,000) for construction of the building of the Faculty of Medicine and its branches in Buenos Aires. This building will have an annex for the Faculties of Pharmacy and Odontology. The committee in charge of the work, presided over by Dr. José Arce, has been asked to prepare plans for the maternity building and the institute of pathologic anatomy and the polyclinics, the cost not to exceed 2,000,000 and 6,024,000 Argentine pesos ($500,000 and $1,500,000) respectively, equipment included. The construction of the building will begin immediately and is under contract with a German firm.

Marriages

WILLIAM DERREL HAZLEHURST, Charleston, S. C., to Miss Harriet Letcher McKay of Macon, Ga., in March.

WILLIAM BLAIR HARRISON, Athens, Tenn., to Miss Martha Nell Walton of Atlanta, Ga., March 6.

JAMES BOWRON MCLESTER, Birmingham, Ala., to Miss Meade Belden, New York, in March.

ROBERT ALEXANDER WHITE to Miss Mildred Baird, both of Asheville, N. C., March 16.

MAX EHRLICH to Miss Jeannette Gordon, both of Elizabeth, N. J., Dec. 26, 1938.

WALTER HENRY GERWIG JR. to Miss Olive Bowman, both of Baltimore, March 18.

Deaths

Charles Horace Mayo ✠ noted as a surgical genius, a great medical administrator and a genial physician, died in Chicago of pneumonia, May 26. The younger of the two world-famed Mayo brothers was born in Rochester, Minn., July 19, 1865, the son of William Worrall Mayo and Louise Wright Mayo. After an education in the Rochester high school and at the Niles Academy he attended Chicago Medical College, later known as Northwestern University, and received his degree in medicine in 1888. As a young boy he began, almost from childhood, to live in a medical atmosphere and to become inspired toward medicine as a career. After his graduation in medicine he returned to Rochester, where his urge toward research and his surgical genius led to innumerable investigations in medicine and in surgery. His first published statement was a joint contribution with his brother, Dr. William J. Mayo, entitled "Report of Clinic in St. Mary's Hospital, Rochester, Minnesota, January 19, 1891," which was published in the *Northwest Lancet* in November of that year. From that time on hardly a year passed without a contribution by either Dr. Charles H. Mayo alone or with his brother, or with some of the younger men who soon became attracted to them. These contributions cover every phase of medicine and surgery and in later years embrace as well the fields of philosophy, economics and statesmanship.

CHARLES HORACE MAYO, M.D., 1865-1939

In the field of scientific medical organizations Dr. Charles H. Mayo was president of the Western Surgical Association in 1904, the Minnesota State Medical Association in 1905, the Society of Clinical Surgery in 1911, the Clinical Congress of Surgeons of North America in 1914, the American Medical Association in 1916, the American College of Surgeons in 1924, the American Surgical Association in 1931 and the Minnesota Public Health Association from 1932 to 1936.

Many of the greatest universities in the world conferred honorary degrees on him. Thus the master of arts degree was conferred by Northwestern University in 1904, fellowship in the Royal College of Surgeons in England in 1920 and in the Royal Society of Medicine in 1926, and master in chirurgery by Trinity College of Dublin in 1925. He was made doctor of public health by the Detroit College of Medicine and Surgery in 1927 and doctor of science by Princeton University in 1917, the University of Pennsylvania in 1925 and the University of Leeds in England in 1909. He also received the honorary degree of LL.D. from the University of Maryland in 1909, Kenyon College in 1916, Northwestern University in 1921, the University of Edinburg in Scotland in 1925, Queen's University in Belfast, Ireland, in 1925, University of Manchester in England in 1929, Hamline University in 1930, and Carleton College in 1932.

A number of great nations also honored him with citations for distinguished service, the record including officier de l'Ordre national de la legion d'honneur, France, 1925; officier de l'Instruction publique et des beaux-arts, France, 1925, and Cross of Knight Commander of the Royal Order of the Crown of Italy, 1932, as well as citations from many other countries.

During the World War he and his brother, Dr. William J. Mayo, alternated between Rochester, where they maintained graduate study for physicians entering the service, and the personnel department in Washington. They served also as consultants in surgery. Dr. Charles H. Mayo was commissioned Major on April 19, 1917, Colonel June 15, 1918, and Brigadier General Nov. 22, 1921. He received the distinguished service medal of the United States Army on June 7, 1920. With Dr. William J. Mayo he was cited for distinguished service by the National Organization of the American Legion and presented with a commemorative plaque, the special ceremony being conducted by President Franklin D. Roosevelt in person in 1934.

The list of his membership in distinguished civic and medical organizations, both American and foreign, is far too long to list. To many of these he gave personally of himself and of his advice, in others he held honorary membership only. He gave also freely of himself and of his work to many scientific and general publications. He served as health officer of the city of Rochester since May 1, 1912, and as a member of the school board of that city from 1915 to 1923.

In 1915 Drs. William J. and Charles H. Mayo established the Mayo Foundation for Medical Education and Research in Rochester, affiliating this organization with the University of Minnesota. Their first contribution was $1,500,000, which has now been increased to more than $2,650,000. In order to perpetuate this institution, the Mayo Properties Association was established in 1919 to hold all the property, endowments and funds of the Mayo Clinic and to insure the permanence of the institution for public service with the understanding that the moneys and property can never inure to the benefit of any individual.

Dr. William J. Mayo, Dr. Charles Horace Mayo and their distinguished father made a small village become one of the most notable medical centers of the world. Throughout their careers these distinguished leaders devoted themselves to the advancement of organized medicine. The medical society of the county in which they practiced was founded by Dr. William Worrall Mayo. Dr. Charles H. Mayo was widely known not only as a surgical genius, as a great surgical teacher, as an inspired organizer, as a leader in medical advancement and as a citizen of his city, county, state and of the nation, but also as a warm hearted, genial, faithful, true humanitarian, easily approachable, unostentatious, ready to trade wits and banter, always in the most kindly and sympathetic manner. Such men come but infrequently in any civilization and their places are not easily filled as the world moves on.

Henry Khunrath Pancoast ✠ Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1898; professor of radiology at his alma mater and the Medico-Chirurgical College, Graduate School of Medicine, University of Pennsylvania; chairman of the Section on Radiology of the American Medical Association, 1931-1932; member, past president and secretary of the American Roentgen Ray Society and the American Radium Society; member and past president of the American College of Radiology and the Philadelphia Roentgen Ray Society; past president of the first American Congress of Radiology; member of the Radiological Society of North America; first president in 1934 of the examining board of the American Board of Radiology; member of the board of directors and from 1932 to 1935 member of the executive committee of the American Society for the Control of Cancer; served in the navy during the World War; consulting physiologist to the United States Bureau of Mines, 1923-1938; served at various times and in various capacities on the staffs of the University of Pennsylvania Hospital, Bryn Mawr (Pa.) Hospital, Chestnut Hill Hospital and the Philadelphia General Hospital; author, with E. P. Pendergrass, of "Pneumoconiosis (Silicosis): A Roentgenological Study with Notes on Pathology," published in 1926; aged 64; died, May 20, at his home in Merion Station.

Antonie Phineas Voislawsky ✠ New York; Dartmouth Medical School, Hanover, N. H., 1897; member of the American Laryngological Association, American Laryngological, Rhinological and Otological Society and the American Otological Society; fellow of the American College of Surgeons; laryn-

gologist and chief of clinic, St. Luke's Hospital; attending otolaryngologist, Staten Island Hospital, Tompkinsville; laryngologist to the Fifth Avenue Hospital; consulting otologist to the Harlem Eye, Ear and Throat Infirmary, Manhattan Maternity and Dispensary, New York, Northern Westchester Hospital, Mount Kisco; consulting laryngologist to the New York Society for Relief of the Ruptured and Crippled; aged 66; died, February 22, in the Neurological Institute of brain tumor.

Maurice Brodie, Detroit; McGill University Faculty of Medicine, Montreal, Que., 1928; National Research Fellow in Medicine, 1933-1934; at one time assistant professor of bacteriology at the New York University, University and Bellevue Hospital Medical College; member of the American Association of Pathologists and Bacteriologists and the Society of American Bacteriologists; formerly in charge of infantile paralysis research at the Bureau of Laboratories, New York City Health Department; assistant director of laboratories, Providence Hospital; was widely known for his research on the treatment and causes of infantile paralysis; author of numerous articles on the subject; aged 35; died, May 9.

James Clifton Edgar ✠ Greenwich, Conn.; University of the City of New York Medical Department, 1885; professor emeritus of obstetrics, Cornell University Medical College; at various times instructor of pathology, lecturer in obstetrics and adjunct professor at the New York University; member of the Medical Society of the State of New York; fellow of the American College of Surgeons; consulting obstetrician to the Bellevue, New York Maternity and Jewish Maternity hospitals, New York, and Greenwich (Conn.) General Hospital; author of "The Practice of Obstetrics," published in 1903; aged 79; died, April 7, of chronic myocarditis, arteriosclerosis and chronic prostatitis.

Gatewood ✠ Chicago; Rush Medical College, Chicago, 1911; clinical professor of surgery at his alma mater; member of the American Surgical Association and the Western Surgical Association; fellow of the American College of Surgeons; associate attending surgeon to the Presbyterian Hospital for many years; attending surgeon to the Cook County Hospital and the Highland Park (Ill.) Hospital; treasurer of the Chicago Surgical Society; author of numerous articles in various surgical journals; aged 51; died suddenly May 22, at his home in Highland Park, Ill., of heart disease.

William Crooks Thro, Long Island City, N. Y.; Cornell University Medical College, New York, 1907; member of the American Association of Anatomists, American Association of Pathologists and Bacteriologists, Society of American Bacteriologists and the American Society of Clinical Pathologists; at one time assistant professor of clinical pathology at his alma mater, and associate professor of medicine (clinical pathology); formerly pathologist to St. Mark's Hospital and visiting pathologist to the Reconstruction Hospital; aged 63; died, April 6.

James Henry Kenyon ✠ New York; Columbia University College of Physicians and Surgeons, New York, 1898; at one time adjunct professor of surgery, Fordham University School of Medicine; member of the American Association for Thoracic Surgery; fellow of the American College of Surgeons; served during the World War; visiting surgeon to the Fordham Hospital; associate surgeon to the New York Neurological Institute; on the staff of the Booth Memorial Hospital; aged 66; died, April 10, of coronary thrombosis.

Robert Sattler ✠ Cincinnati; Miami Medical College, Cincinnati, 1875; professor emeritus of ophthalmology at the University of Cincinnati College of Medicine; member and past president of the American Ophthalmological Society; fellow of the American College of Surgeons; aged 83; ophthalmic surgeon to the Cincinnati General Hospital and medical director of the Ophthalmic Hospital, where died, February 20, of coronary thrombosis.

Harris Holmes Vail ✠ Cincinnati; Harvard University Medical School, Boston, 1917; member of the American Academy of Ophthalmology and Oto-Laryngology and the American Otological Society; instructor of otolaryngology, University of Cincinnati College of Medicine; served during the World War; on the staffs of the Cincinnati General Hospital, Christ Hospital and the Good Samaritan Hospital; aged 47; died, April 10, of angina pectoris.

Herbert Fleming Wilson, Covington, Ky.; Hospital College of Medicine, Louisville, 1901; member of the Kentucky State Medical Association; formerly city health officer and member of the board of health; at one time served in various capacities at the William Booth Memorial Hospital and St. Elizabeth Hospital; aged 63; died, February 1, of angina pectoris.

Andrew Phillips Albaugh, Tarpon Springs, Fla.; Miami Medical College, Cincinnati, 1887; member of the Florida Medical Association; past president of the Pinellas County Medical Society; for many years president of the city council and member of the local school board; city health officer; aged 76; died, March 16, of cerebral hemorrhage.

William Allen White, Boston; Tufts College Medical School, Boston, 1894; member of the Massachusetts Medical Society; assistant in theory and practice of medicine, 1893-1894, and lecturer, diseases of children, 1893-1897, at his alma mater; aged 74; on the staff of the Massachusetts Women's Hospital, where he died, February 6, of pneumonia.

Marshall Flowers Lummis ✠ Pitman, N. J.; University of Pennsylvania Department of Medicine, Philadelphia, 1901; past president of the Gloucester County Medical Society; served during the World War; medical inspector in the schools; aged 59; died, February 25, in the Hahnemann Hospital, Philadelphia, of staphylococcic septicemia.

William Albert Jones, Homestead, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1897; member of the Medical Society of the State of Pennsylvania; physician for the department of child welfare and city board of education; aged 65; died, February 21, in the Homestead Hospital of angina pectoris.

Robert D. Voorhies ✠ Lafayette, La.; Hahnemann Medical College and Hospital, Chicago, 1895; served during the World War; on the staff of the Lafayette Charity Hospital; aged 66; died, February 9, in the Hotel Dieu, Sisters' Hospital, New Orleans, of coronary thrombosis and chronic myocarditis.

Allen Francis Gillihan, San Luis Obispo, Calif.; University of California Medical Department, San Francisco, 1899; served as health officer of Oakland, district health officer for the state board of health and health officer of San Luis Obispo County; aged 66; died, February 15.

Clarence Willard Winbigler, Harper, Kan.; Bellevue Hospital Medical College, New York, 1877; member of the Kansas Medical Society; aged 85; died, February 26, in the Hatcher Hospital, Wellington, of chronic infection of the urinary tract with kidney failure.

Henry Edwin Waterhouse ✠ Bridgeport, Conn.; Columbia University College of Physicians and Surgeons, New York, 1902; fellow of the American College of Surgeons; chief obstetrician to the Bridgeport Hospital; aged 61; died, February 4, of coronary occlusion.

Lonnie Doak Allen, Smithville, Tenn.; University of Nashville Medical Department, 1898; at one time secretary of the De Kalb County Medical Society; formerly bank president; for many years county physician; aged 67; died, March 5, of pneumonia.

Robert Norton Downs Jr., Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1895; on the staff of the Germantown Dispensary and Hospital; aged 65; died, February 9, of chronic myocarditis and coronary sclerosis.

Troy Curtis Sexton ✠ Las Cruces, N. M.; Medical Department of Tulane University of Louisiana, New Orleans, 1902; for many years secretary of the Dona Ana County Medical Society; formerly mayor; aged 61; died, February 23, of angina pectoris.

David Ward Magee, Caseyville, Miss.; University of Nashville (Tenn.) Medical Department, 1907; member of the Mississippi State Medical Association; served during the World War; aged 55; died, February 12, of carcinoma of the colon and rectum.

Frederick Marshall Parker, Halifax, N. C.; University College of Medicine, Richmond, Va., 1897; for many years physician to the Caledonia Prison Farm; aged 63; died, February 13, in the Park View Hospital, Rocky Mount, of pneumonia.

Edward Augustine Supple, Boston; Harvard University Medical School, Boston, 1907; member of the Massachusetts Medical Society; fellow of the American College of Surgeons; aged 56; died, February 26, in the Audubon Hospital of pneumonia.

George Washington Newman, Montrose, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1903; member of the Medical Society of the State of Pennsylvania; county jail physician; aged 65; died, February 7, of coronary thrombosis.

John Henry Rapp, Wichita, Kan.; University of Colorado School of Medicine, Denver, 1913; member of the Kansas Medical Society; served during the World War; aged 49; died, February 18, in St. Francis Hospital of lobar pneumonia.

John Stimson Woolery ✠ Bedford, Ind.; Indiana University School of Medicine, Indianapolis, 1933; county health officer; aged 33; died, February 3, in the Methodist Hospital, Indianapolis, of injuries received in an automobile accident.

John Kirkland Ross, Charlotte, N. C.; Jefferson Medical College of Philadelphia, 1907; served during the World War; formerly connected with the U. S. Veterans Bureau; aged 61; died, February 19, of heart disease and diabetes mellitus.

Charles Mortimer Smith ✠ Evansville, Wis.; Rush Medical College, Chicago, 1890; for many years city health officer and member and chairman of the county board of supervisors; aged 72; died, February 23, of cerebral hemorrhage.

Ira Miltimore ✠ Gary, Ind.; Rush Medical College, Chicago, 1903; fellow of the American College of Surgeons; on the staffs of the Mercy and Methodist Episcopal hospitals; aged 58; died, February 14, of coronary occlusion.

Henry Clinton Bembry, Philadelphia; Howard University College of Medicine, Washington, D. C., 1910; aged 59; died, February 22, in the Philadelphia General Hospital of cerebral thrombosis and hypertensive cardiovascular disease.

Michael Henry Shea, Fall River, Mass.; College of Physicians and Surgeons, Baltimore, 1900; for many years medical inspector in the public schools; aged 77; died, February 4, of arteriosclerosis, myocarditis and bronchopneumonia.

Edwin Clarence Bliss, Grinnell, Iowa; Rush Medical College, Chicago, 1885; member of the Iowa State Medical Society; aged 79; died, February 26, in Oberlin, Ohio, of mitral stenosis, cardiac enlargement and arteriosclerosis.

George Knowlton Janes, Williamsburg, Kan.; Missouri Medical College, St. Louis, 1884; member of the Kansas Medical Society; formerly many years member of the school board; aged 78; died, February 17, of diabetes mellitus.

Waldo Fisher, Alton, Ill.; Rush Medical College, Chicago, 1882; formerly member of the city council and board of education; for many years on the staff of St. Joseph's Hospital; aged 81; died, February 8, of cerebral sclerosis.

John Percy Nelson ✠ Beggs, Okla.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1904; aged 69; died in February in Okmulgee of streptococcic infection of the nose and throat.

William Henry Rennie, Portage la Prairie, Man., Canada; Trinity Medical College, Toronto, Ont., 1900; president, Council of the College of Physicians and Surgeons of Manitoba; aged 67; died, February 6, of myocarditis.

Hubert C. Hannah ✠ Junction City, Kan.; Homeopathic Medical College of Missouri, St. Louis, 1897; on the staff of the Junction City Municipal Hospital; aged 64; died, February 14, of a self-inflicted bullet wound.

Edward Arthur Darby, St. Cloud, Minn.; University of Michigan Homeopathic Medical School, Ann Arbor, 1888; Cleveland Medical College, 1891; aged 83; died, February 11, of cerebral hemorrhage and hypertension.

Jesse Dalton Johnston, Emporium, Pa.; Medico-Chirurgical College of Philadelphia, 1910; for many years county coroner; aged 55; died, February 3, of acute cardiac dilatation, coronary thrombosis and myocarditis.

Garland Lightfoot Morriss, Blackstone, Va.; University College of Medicine, Richmond, 1902; member of the Medical Society of Virginia; aged 60; died, February 24, of adenocarcinoma of the stomach and duodenum.

John Morgan Golden, Walnut Grove, Miss.; Memphis (Tenn.) Hospital Medical College, 1891; member of the Mississippi State Medical Association; aged 72; died, February 25, of a self-inflicted bullet wound.

Henry W. Schulz, St. Louis; St. Louis Medical College, 1888; member of the Missouri State Medical Association; aged 70; on the staff of the Lutheran Hospital, where he died, February 10, of heart disease.

Frederick H. Metcalf ✠ Franklin, Ill.; Chicago Medical College, 1886; aged 76; died, February 20, in Our Saviour's Hospital, Jacksonville, of uremia, following urinary retention due to hypertrophied prostate.

James Franklin Turner Jr., Detroit; University of Arkansas School of Medicine, Little Rock, 1937; aged 23; intern at the Henry Ford Hospital, where he died, February 3, of subacute bacterial endocarditis.

Rigdon H. Slocumb, Maywood, Calif.; University of Nebraska College of Medicine, Omaha, 1924; served during the World War; aged 42; died, February 12, in Huntington Park, Calif., of pneumonia.

Clinton Grant Lumley, Huntington Park, Calif.; Chicago Medical College, 1889; member of the California Medical Association; aged 76; died, February 16, of hypertensive heart disease and diabetes mellitus.

Edward Joseph Walsh, Davenport, Iowa; Bennett College of Eclectic Medicine and Surgery, Chicago, 1890; Rush Medical College, Chicago, 1891; aged 69; died, February 4, of carcinoma of the pancreas and liver.

Don L. Harden, Brownville Junction, Maine; Medical School of Maine, Portland, 1905; aged 59; died, February 4, in the New England Deaconess Hospital, Boston, of hemochromatosis and uremia.

Bird Hagans Miller ✠ Blockton, Iowa; Marion-Sims College of Medicine, St. Louis, 1893; past president of the Taylor County Medical Society; aged 71; died, February 24, of bronchopneumonia.

Fred A. Seed, Atlanta, Ga.; Homeopathic Medical College of Missouri, St. Louis, 1897; veteran of the Spanish-American War; aged 62; died, February 7, of coronary occlusion and arterial hypertension.

Scott F. Verbeck, Mazomanie, Wis.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1883; formerly member of the state legislature; aged 78; died, February 13, of coronary thrombosis.

William James Sharpe, Toledo, Ohio; McGill University Faculty of Medicine, Montreal, Que., Canada, 1872; aged 87; died, February 4, at his winter home in Delray Beach, Fla., of chronic nephritis.

William H. Hickman, Philadelphia; Jefferson Medical College of Philadelphia, 1881; aged 78; died, February 11, of arteriosclerotic heart disease with auricular fibrillation and cerebral embolism.

Jacob Herman Christman, Los Angeles; Eclectic Medical Institute, Cincinnati, 1903; aged 65; died, February 8, in a local hospital of uremia due to carcinoma of the prostate with urinary retention.

Walter Vander Wilt, Rock Rapids, Iowa; State University of Iowa College of Medicine, Iowa City, 1925; member of the Iowa State Medical Society; aged 40; died, February 7, of lobar pneumonia.

Edward Winslow Taylor, Philadelphia; Jefferson Medical College of Philadelphia, 1881; aged 84; died, February 6, in the Germantown Hospital of prostatic hypertrophy and hypostatic pneumonia.

Martin R. Doyle, East St. Louis, Ill.; Kentucky School of Medicine, Louisville, 1885; aged 83; died, February 5, in St. Mary's Hospital of a large stone in the common bile duct and cholecystitis.

John Walters Cristler, Shippingport, Pa.; Medical College of Ohio, Cincinnati, 1886; member of the Medical Society of the State of Pennsylvania; aged 81; died, February 13, of arteriosclerosis.

William Wiley Stancell, Rockingham, N. C.; University College of Medicine, Richmond, 1906; aged 57; died, February 9, of burns received when his mattress caught fire, presumably from a cigaret.

Florence Quindaro McQuaide ✠ Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1889; aged 71; died, February 9, in Brigantine Beach, N. J., of arteriosclerotic heart disease.

Edmund William Bolio, Detroit; Detroit College of Medicine, 1893; served during the World War; aged 68; died, February 2, in the Providence Hospital of acute gangrenous appendicitis.

Ralph Emerson Jenkins Le Master, Marion, Ind.; Rush Medical College, Chicago, 1930; member of the Indiana State Medical Association; aged 36; died, February 5, of coronary thrombosis.

Howard Dewey Booth, Charleston, W. Va.; Medical College of Virginia, Richmond, 1938; aged 38; intern at the Charleston General Hospital, where he died, February 10, of peritonitis.

Arthur William Davies, College Springs, Iowa; Northwestern Medical College, St. Joseph, Mo., 1893; aged 77; died, February 4, in the Hand Hospital, Shenandoah, of bronchopneumonia.

John S. Hogshead, Covelo, Calif.; St. Louis College of Physicians and Surgeons, 1899; formerly connected with the Indian Service; aged 76; died, February 15, of coronary occlusion.

Thomas J. Miller, Norwich, Ohio; Columbus Medical College, 1878; Medical College of Ohio, Cincinnati, 1887; aged 89; died, February 5, in New Concord of arteriosclerotic heart disease.

Frank M. Ryan ✠ Maryville, Mo.; Ensworth Medical College, St. Joseph, Mo., 1892; past president of the Nodaway County Medical Society; aged 69; died, February 19, of heart disease.

Ebberly J. Leigh ✠ Hiawatha, Kan.; Rush Medical College, Chicago, 1884; past president of the Brown County Medical Society; aged 78; died, February 18, of prostatitis and uremia.

Oliver Archibald Taylor, Cleveland; Meharry Medical College, Nashville, Tenn., 1894; aged 66; died, February 25, in the Mount Sinai Hospital of meningitis and bronchopneumonia.

Joseph Potter Riggs, Milton, N. J.; University of Maryland School of Medicine, Baltimore, 1903; aged 59; died, February 24, in the Franklin (N. J.) Hospital of lobar pneumonia.

George Washington Potter ✠ Redfield, S. D.; Rush Medical College, Chicago, 1901; on the staff of the Baldwin Community Hospital; aged 64; died, February 15, of bronchopneumonia.

Lee B. Van Camp, Omaha; University of Nebraska College of Medicine, Omaha, 1898; for many years county physician; aged 61; died, February 27, in the Clarkson Hospital of pneumonia.

John Peters Squire, Sherrill, Iowa; St. Louis College of Physicians and Surgeons, 1902; aged 57; died, February 10, in the Mercy Hospital, Dubuque, of carcinoma of the thyroid.

John Ernest Drury, Wenatchee, Wash.; Trinity Medical College, Toronto, Ont., Canada, 1901; aged 64; died, February 7, of hypertensive heart disease and cerebral hemorrhage.

Frederick Hall Corey ✠ Rockland, Mass.; Tufts College Medical School, Boston, 1904; aged 60; died, February 18, in the Deaconess Hospital, Boston, of hypertensive heart disease.

William Henry Wiley, Clearmont, Mo.; Northwestern Medical College, St. Joseph, 1890; aged 76; died, February 2, of cerebral thrombosis, endocarditis and bronchopneumonia.

Thomas Duff, Wampum, Pa.; Baltimore Medical College, 1911; member of the Medical Society of the State of Pennsylvania; aged 56; died, February 16, of cerebral hemorrhage.

Charles Wittenmyer, Arcanum, Ohio; Detroit Medical College, 1885; aged 81; died, February 7, of influenza, bronchopneumonia and a fractured femur due to a fall on the ice.

Nelson B. Ross, Muncie, Ind.; Medical College of Indiana, Indianapolis, 1895; aged 66; died, February 8, in the Indiana State Prison Hospital, Michigan City, of heart disease.

Virgil Eubank Stiff, Harmony Village, Va.; Medical College of Virginia, Richmond, 1906; aged 62; died, February 11, at the Stuart Circle Hospital, Richmond, of mastoiditis.

Salvatore Schiro, San Francisco; Regia Università degli Studi di Palermo Facoltà di Medicina e Chirurgia, Italy, 1900; aged 62; died, February 1, of poison, self administered.

Kash Stanley Peters, Bethlehem, Pa.; Temple University School of Medicine, Philadelphia, 1935; aged 28; died, February 10, of burns received when his home caught fire.

James Thomas Glass, Clifton, Texas; University of Louisville (Ky.) Medical Department, 1889; aged 81; died, February 7, of chronic cholecystitis and gastro-enteritis.

Karl Waller Smith, Madison, Wis.; Jefferson Medical College of Philadelphia, 1911; served during the World War; aged 59; died, February 13, of cerebral hemorrhage.

Charles E. Bricker, Philadelphia; Jefferson Medical College of Philadelphia, 1880; for many years city police surgeon; aged 83; died, February 16, of bronchopneumonia.

Albert Sidney Beasley Jr., New York; Harvard University Medical School, Boston, 1919; aged 44; died, February 14, in the Mount Sinai Hospital of heart disease.

William A. Welch, Wooster, Ohio; Western Reserve University Medical Department, Cleveland, 1884; aged 77; died, February 2, of uremia and hypostatic pneumonia.

Frank Elmer McClane, St. Petersburg, Fla.; Barnes Medical College, St. Louis, 1895; served during the World War; aged 75; died, February 6, of myocarditis.

Royal Deforest Sykes, Cumberland, Md.; Western Reserve University Medical Department, Cleveland, 1887; aged 72; died, February 2, of chronic myocarditis and nephritis.

Thomas Martin, Washington, D. C.; Howard University College of Medicine, Washington, 1884; aged 83; died, February 15, of chronic nephritis and myocarditis.

James Aloysius Harten, Montowese, Conn.; Baltimore Medical College, 1910; aged 53; died, February 6, of cerebral hemorrhage and arteriosclerotic heart disease.

Harlie V. Lewis, Lawrenceville, Ill.; Physio-Medical College, Cincinnati, 1880; formerly county coroner; aged 80; died, February 11, of cerebral hemorrhage.

Julius Rugg Hamilton, Los Angeles; Medical College of Virginia, Richmond, 1914; served during the World War; aged 51; died, February 5, of coronary occlusion.

Joseph Thomas Gaines, Denver; Kentucky School of Medicine, Louisville, 1893; aged 68; died, February 2, in St. Joseph's Hospital of cerebral hemorrhage.

George McClain Harper, Springfield, Ill.; Medical College of Indiana, Indianapolis, 1897; aged 61; died, February 4, in St. John's Hospital of diabetes mellitus.

Francis Marion Replogle, Los Angeles; Miami Medical College, Cincinnati, 1895; aged 85; died, February 13, of coronary thrombosis and cardiac hypertrophy.

Albert Augustine Judge, Boston; Harvard University Medical School, Boston, 1897; aged 72; died, February 19, of arteriosclerosis and cerebral thrombosis.

John L. Carroll, Asheville, N. C.; Louisville (Ky.) Medical College, 1905; formerly county coroner; aged 69; died, February 7, of gangrenous appendicitis.

George F. Garmier, Hartville, Ohio; Western Reserve University Medical Department, Cleveland, 1896; aged 74; died, February 14, of arteriosclerosis.

Robert Watt Watterson, Darlington, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1889; aged 78; died, February 20, of chronic myocarditis.

Harvey Allen Harding, Amsterdam, Ohio; Starling Medical College, Columbus, 1898; aged 71; died, February 7, at Cadiz of carcinoma of the prostate.

Walter S. Mason, Cambridge, Ohio; Medical College of Ohio, Cincinnati, 1889; aged 74; died, February 14, of chronic myocarditis and paralysis agitans.

Charles Wesley Schaubel ✠ Philadelphia; Jefferson Medical College of Philadelphia, 1904; aged 56; died, February 25, of chronic interstitial nephritis.

Arthur Alanson Griffis ✠ Tipton, Iowa; Cleveland Homeopathic Medical College, 1898; aged 77; died, February 10, of carcinoma of the stomach.

James Robert Porter, Washington, D. C.; Howard University College of Medicine, Washington, 1929; aged 42; died, February 10, of pneumonia.

James Putney, Charleston, W. Va.; University of Maryland School of Medicine, Baltimore, 1889; aged 79; died, February 6, of heart disease.

George R. Peckinpaugh, Mount Vernon, Ind.; Medical College of Ohio, Cincinnati, 1882; aged 84; died, February 10, of hypostatic pneumonia.

Almon Dwight Birchard, Cincinnati; Miami Medical College, Cincinnati, 1884; aged 80; died, February 19, of cardiorenal vascular sclerosis.

David C. Shelton, Jasper, Tenn.; University of Nashville Medical Department, 1897; aged 70; died, February 4, of organic heart disease.

Robert Cooper Rasin, Philadelphia; Baltimore University School of Medicine, 1890; aged 76; died, February 5, of acute cardiac dilatation.

James H. Westcott, Utica, N. Y.; Philadelphia University of Medicine and Surgery, 1872; aged 88; died, February 6, of arteriosclerosis.

Frank Nichols Greene, New York; Jefferson Medical College of Philadelphia, 1890; aged 70; died, February 2, of heart disease.

Edward Lorne Jackson, Sierra Madre, Calif.; Manitoba Medical College, Winnipeg, 1896; aged 68; died, February 3, of peritonitis.

Lowndes Hendrick, Brundidge, Ala.; Medical College of Alabama, Mobile, 1890; aged 74; died, February 17, of cerebral hemorrhage.

John Brooks Wertz, Spencer, Iowa; State University of Iowa College of Medicine, Iowa City, 1892; aged 73; died, February 6.

Wilbur Lament Rickard, Brooklyn; Long Island College Hospital, Brooklyn, 1889; aged 71; died, February 15, of pneumonia.

Edward Danby Gibson, Buffalo; University of Buffalo School of Medicine, 1900; aged 61; died, February 10, of heart disease.

Thomas F. Ringle, Tippecanoe, Ind. (licensed in Indiana in 1897); aged 87; died, February 15, of heart disease.

Correspondence

"RELATION OF PHYSICAL EXERTION AND EMOTION TO PRECIPITATION OF CORONARY THROMBI"

To the Editor:—A communication by Drs. Masters, Dack and Jaffe in THE JOURNAL April 22 referring to my paper entitled "Relation of Physical Exertion and Emotion to Precipitation of Coronary Thrombi" in THE JOURNAL March 11 deserves some comment.

I am afraid that your correspondents have missed the main point in my paper. I have shown that the formation of coronary thrombi is gradual, sometimes occupying several days before occlusion with its resulting precordial pain is produced. The onset of precordial pain, then, merely marks the final phase of a process which was initiated (by capillary rupture) some time previously. Therefore the activities of a patient just before the onset of precordial pain, as tabulated in 1,400 cases by your correspondents, are purely coincidental and have no relation to the cause of thrombus precipitation. Their smaller series of 250 cases warrants more attention. I have the greatest respect for the careful study which Masters and his co-workers have given to the case histories in their various series but I submit that no history can adequately cover the numerous emotional shocks that occur to an individual in the course of four weeks. Their finding, therefore, that 250 cases of coronary thrombosis failed to give a history of undue exertion or emotion for a month prior to occlusion must be accepted with reserve. Likewise the statement that their group of forty patients who suffered from carcinoma, heart failure and the like and who were bedridden for weeks or months prior to coronary artery occlusion is open to objection. I should like to know how many of these forty patients suffered from persistent hypertension. Physical exertion in this small series is ruled out, but can the fear of death, the fear of operation, the presence of nightmares and the like, all of which may produce transient hypertension, be eliminated?

In my paper I did not "categorically state that coronary thrombi are precipitated by exertion and emotion." I suggested, rather, that "high coronary blood pressure, the result of strenuous exertion or emotion (or of persistent hypertension) is one of the underlying causes of capillary rupture and intimal hemorrhage in arteriosclerotic coronary arteries." Obviously there are other factors that may produce intimal hemorrhages, and these I have described in detail in previous papers. Included among these other factors are softening by atheroma of the stroma supporting the capillary, and also various conditions that may increase capillary fragility, such as old age and local inflammatory processes. Vitamin deficiency also may render intimal capillaries more fragile.

Your correspondents state that I have given purely theoretical arguments but neither pathologic nor clinical evidence to show that hypertension, persistent or transient, can produce subintimal hemorrhage and resulting coronary thrombosis. May I repeat the pathologic evidence, much of which has already been included in my previous papers? 1. Clark (*Ann. Int. Med.* **9**:1043 [Feb.] 1936) found that young capillaries in the rabbit's ear, as observed through a transparent chamber, were readily dilated and ruptured by slight external pressure or by increased blood pressure. 2. Cutter and Marquardt (*Proc. Soc. Exper. Biol. & Med.* **28**:113 [Nov.] 1930), on exerting negative external pressure on the capillaries of the skin, found that rupture occurred at lower negative pressures in persons with hypertension (200 mm. plus) than in those with normal pressures. 3. I have already remarked on the fact that intimal capillaries are usually of normal caliber when seen in the denser intimal layers, while they are frequently dilated in areas of atheroma and as they penetrate intimal hemorrhages. This dilatation must obviously be due in part to pressure within the capillaries. Wartman, a pathologist (*Am. Heart J.* **15**:459 [April] 1938), remarks: "It is easy to conceive that capillaries within an atheromatous plaque may rupture, for the soft, easily compressible material of the atheroma offers no support against the capillary blood pressure. Since patients with coronary arteriosclerosis frequently have hypertension, a small intramural capillary might readily be ruptured and form a hematoma." Pathologists do not often agree thus. If persistent hypertension can result in capillary dilatation and rupture, as the foregoing evidence suggests, will not transient hypertension due to excessive exercise or emotion produce the same effect?

I was interested to note that your correspondents agree that coronary thrombosis is usually associated with subintimal hemorrhage. May I state here that I did not "corroborate" any one's work in connection with these lesions. I discovered and described intimal hemorrhages due to capillary rupture and showed their relation to coronary thrombosis (*Arch. Path.* **22**:313 [Sept.] 1936).

J. C. PATERSON, M.D., Ottawa, Canada.

AMPHETAMINE IN CHRONIC ALCOHOLISM

To the Editor:—The reply which recently appeared in Queries and Minor Notes to a letter relative to the use of amphetamine (benzedrine) in the treatment of chronic alcoholism as recommended by Dr. Wilfred Bloomberg might easily give rise to a regrettable misunderstanding. Dr. Bloomberg made the suggestion only after long experience with the drug in other conditions, for he (with Prinzmetal) was the first to report its effectiveness in the treatment of narcolepsy. He has further, in preparation, a detailed study of the effects of large doses given over a period of three years to some of his early patients and a careful survey of all the cases in which ill effects are reported to have followed the use of the drug. This study has led him to the belief that its use under medical supervision is entirely justified when dealing with such serious diseases as narcolepsy and chronic alcoholism.

The merits of the treatment should certainly not be judged from the much garbled press report, for which Dr. Bloomberg was not responsible. Those who are interested in the subject should by all means read his conservative and well documented article in the *New England Journal of Medicine* (**220**:129 [Jan. 26] 1939).

As one who has watched the progress of the work and referred some of the patients to him, I can give testimony that he has understated rather than overstated his case.

TRACY J. PUTNAM, M.D.,
Harvard Medical School,
Boston.

TELEPHONE DIRECTORIES IN THE MOUNTAIN STATES

To the Editor:—In the March 25 issue of THE JOURNAL was an editorial comment regarding "Florida Telephone Directories" whereby the users of Florida telephone directories published by the Southern Bell Telegraph and Telephone Company may know whether a person listed therein as a doctor is a doctor of medicine, an osteopath, a chiropractor, a naturopath or a practitioner of some other method of healing.

I have made an investigation of the situation here in Arizona as relates to the foregoing and I find that the Mountain States Telephone and Telegraph Company has since November 1920 been adhering to this policy, and I think it only fair to this company that proper credit be given it for its cooperation.

CHARLES S. SMITH, M.D., Nogales, Ariz.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

CENTRAL NERVOUS SYSTEM SYPHILIS

To the Editor:—Have you any information regarding the effect of mapharsen on syphilis of the central nervous system following spinal drainage that would fix it in the nerve centers and cause paralysis? A white man aged 38 came down two years ago with partial paralysis of the left arm and leg and responded to oral medication in the form of drops—probably potassium iodide. A routine examination required by his employers revealed strongly positive Wassermann and Kahn reactions. The treatment consisted of four injections of neoarsphenamine four days apart in ascending doses, 0.15, 0.2, 0.3 and 0.6 Gm., biweekly administration of bismuth preparations, six injections of 1.5 per cent and nine injections of 3 per cent, and eleven injections of mapharsen, 0.04 Gm. once a week with a total of four neoarsphenamine, eleven mapharsen and fifteen bismuth injections between Sept. 8 and Dec. 20, 1938. At this point malaria was urged as the next therapeutic step. The patient thought this a drastic measure and consulted me. He states that he never had venereal infection or any previous treatment except as outlined. He is married and has three apparently healthy children, 6, 4 and 2 years of age. His wife's blood has been negative on two occasions to Wassermann, Kahn and Kline tests. My examinations were negative except for weakness of the left arm and leg and loss of the reflexes. The blood and spinal fluid gave positive Kahn and Kline reactions. The spinal fluid cell count was 50, globulin a trace and colloidal gold curve 0002210000. I advised spinal drainage, oral potassium iodide and intravenous injections of neoarsphenamine. From my readings I learn that malaria should be tried after other therapy fails in syphilis of the central nervous system, that it works best in dementia paralytica and tabes, and that reversal of the spinal fluid reaction is only about 2 per cent after the first year and 4 per cent after the tenth year. This case was one of the meningovascular type. My first treatment was 0.6 Gm. of neoarsphenamine intravenously and under local anesthesia a complete spinal drainage. These treatments were given at weekly intervals, the patient remaining in bed a full day and returning to his regular occupation the following day. Eight of these were given. After the third treatment a decided improvement followed, the patient stating that his left arm and leg were as good as ever and that his entire outlook on life was brighter. His wife also noticed the change. On the ninth injection I decided to change to mapharsen because of the reversals in the reaction reported in the literature. Mapharsen had previously given him pain along the vein. I injected it rapidly as advised and still the pain developed. A spinal drainage was done under local anesthesia as on eight previous occasions. The following day he said his back was sore and three days after he had retention of urine. On examination there were no new developments except that the prostate was soft, soggy and tender. By massage I expressed a great deal of thick, yellow pus. Almost instantly after the massage he said that his back was much better and he walked about without pain. His retention followed a chill and a rise in temperature to 102 F. The retention persisted and had to be relieved by catheter. He looked as if he had typhoid and was hospitalized. Agglutination tests were negative for typhoid, paratyphoid A and B and undulant fever. Except for a white count of 32,000, other laboratory data were negative. His neck was stiff and advanced Kernig's sign was present on admission. Five days after treatment the spinal tap was dry even with a large caliber needle and suction with a syringe. His abdomen was distended and tympanitic and retention persisted. He died with the temperature going to the ceiling and without an autopsy. I believe that he died of toxemia resulting from intestinal paresis and I hasten to inquire whether the change to mapharsen had anything to do with it. Was I justified in advising against malaria and my recommendations? How do you account for the negative reaction of his wife? Should serologic study be done on children?

M.D., Ohio.

ANSWER.—Considering the information submitted, it would seem that from the theoretical standpoint at least this case of central nervous system syphilis was well and intelligently handled. Without a necropsy it is impossible to state what was the most likely cause of death. There is no reason to think that mapharsen as such was a direct contributory factor. Therapeutic shock (Herxheimer reaction) and therapeutic paradox likewise seem unlikely, considering the amount of antecedent therapy. Hemorrhagic encephalitis, sometimes a complication of arsenical therapy of syphilis, might give a clinical picture similar to the one described. It is unusual for such a reaction to occur so late in the arsenical course. It characteristically follows the first three or four weeks of treatment. Under any circumstance a critical review of the technic employed in the spinal puncture and drainage procedure would seem indicated, though, in the hands of an experienced operator, hardly necessary.

It is not uncommon to find a negative blood serologic test on the wife of a patient with late central nervous system syphilis. There are, of course, several possibilities under the circumstances: first, that the wife has not been infected because sexual union occurred after the husband had reached a late and relatively noninfectious stage of his disease; secondly, that the woman has had syphilis of long duration and has become seronegative either with or without treatment.

Since the children for all practical purposes are always infected by the mother, if it can be certain from the clinical standpoint that the mother is not syphilitic there is no indication to study the children for the disease. If, on the other hand, it is not possible to determine whether the woman is in actuality seronegatively syphilitic, it would be advisable to study the children in an effort to determine whether they are diseased.

POSSIBLE THROMBOSIS OF THE BRACHIAL ARTERY

To the Editor:—A man aged 72, with acknowledged arteriosclerosis, struggled quite violently to close a large double door. During the exertion he experienced a sharp pain in his hand and arm. The pain continued, gradually becoming worse. He stated that his hand and arm became cold and chalklike. When pain became so severe in from thirty-six to forty-eight hours a physician was consulted, and eventually amputation was done. A diagnosis of occlusion of the brachial artery was made but no effort was made to locate the presence of an embolus or thrombus. I should like to know whether severe exertion and local muscular activity could so injure the brachial artery already diseased that occlusion resulted.

JAMES J. HENNESSY, M.D., Hartford, Conn.

ANSWER.—It is possible that exertion may produce local injury to an artery so that it becomes thrombosed. Arterial thrombosis following exertion must occur relatively uncommonly, but in the past few years two patients have been examined whose histories are straightforward examples of sudden arterial occlusion of the arteries of the legs occurring during or following exertion. The exact mechanism is not known but probably an atherosclerotic plaque breaks loose from the intima, protrudes into the lumen of the artery and forms the basis for a thrombus. Insufficient evidence is given in the inquiry to determine whether the diagnosis of arterial thrombosis was correct. Was axillary thrombophlebitis caused by effort considered (Matas, Rudolph: *Am. J. Surg.* **24**:642-666 [June] 1934)? If there was arterial thrombosis, there should have been evidence of impaired circulation such as absence of pulsations in the brachial, radial and ulnar arteries or an abnormal pallor of the hand with elevation and abnormal rubor with dependency. The diagnosis could have been substantiated or disproved by examination of the amputated limb or by observation of the arteries by the surgeon at the time of amputation. Necessity for amputation of an arm because of arterial thrombosis occurs rarely. The upper extremity recovers from the consequences of arterial thrombosis much more commonly than does the lower extremity. A summary answer can be stated as follows: Arterial thrombosis could have resulted from effort in the instance described by the inquirer, but a diagnosis of arterial thrombosis cannot be made on the basis of the information given.

RECURRENT HERPES SIMPLEX

To the Editor:—A man has had recurrent impetigo on the lower part of the chin several times a year for the last three years. It begins in the same spot and subsides with treatment. Is this unusual and how would you prevent the recurrence of the condition?

M.D., Massachusetts.

ANSWER.—A vesicular eruption recurring in the same place several times a year is not impetigo but recurrent herpes simplex. There are several methods of treatment more or less successful in preventing recurrence of this disorder. The administration of calcium in large doses, autogenous injections of blood or serum and ultraviolet treatment have all been recommended.

Because of the fact that herpes is one of the diseases caused by a virus and the viruses seem to have some relation one to the other, cowpox vaccine has been used to treat herpes with some success in ameliorating and postponing the attacks. More effective is vaccination with the contents of the patient's own vesicles. Schmidt (Vaccination for Herpes, *Arch. Dermat. & Syph.* **32**:106 [July] 1935) used this method, originated by Plesch, on four patients, and all of them reacted with local redness and slight swelling. One had slight chilliness and nausea for a short time. Two of the four have had no recurrence of the herpes since the vaccination. The other two required a second vaccination and have remained well since.

In a recent article, Hall (Radiation Treatment of Herpes Simplex, *Am. J. Roentgenol.* **39**:393 [March] 1938) reports excellent results from 375 roentgens of unfiltered x-rays, which cause immediate relief of discomfort and rapid resolution of the inflammation. This is a full erythema dose. He also states that he treated four patients with only 120 to 137 roentgens

filtered through 1 mm. of aluminum with excellent results. Others have reported success with this method. Hall quotes Milian's statement that it may be necessary to repeat the treatment as many as four times at intervals of a month to prevent recurrence. If the smaller dose of filtered rays proves as effective as the larger one of unfiltered rays, it would seem preferable in view of the possible necessity of repeating the treatment several times.

DEPILATORIES

To the Editor:—May I have information concerning the relative effectiveness and local irritant action of barium, calcium, sodium and stannous sulfides as depilatories? Please furnish me with sources of information available in the English language. Are there other substances more desirable than the sulfides? I have already consulted the publication entitled "Cosmetics and Allied Preparations."

KARL E. MORRIS, M.D., Rahway, N. J.

ANSWER.—Sodium sulfide, the most soluble of these preparations, is likely to be the most irritating and can be considered only for the preparation of a liquid depilatory. Since the barium ions are toxic, their employment is actually prohibited in certain countries (Germany). Stannous sulfide has not come into general use. It requires a stabilizer. The following formula (from Volk, R., and Winter, F.: Lexikon der kosmetischen Praxis, Vienna, Julius Springer, 1936) is used by some dermatologists:

	Mild	Strong
Strontium sulfide, Gm.	80.0	80.0
Zinc oxide, Gm.	125.0	40.0
Starch, Gm.	150.0	40.0
Menthol, Gm.	1.0	0.6

Mix with water into a thick paste. Apply a moderately thick layer with a wooden spatula, scrape off after from five to seven minutes, rinse off with liberal use of water, apply 0.5 per cent citric acid solution to neutralize the alkali, dry and apply cold cream and finally talcum. Frequent and liberal use of solution of hydrogen peroxide not only bleaches hair but also makes it brittle and is thus in a sense epilating. Rubbing the part, liberally soaped, twice a day with pumice stone removes hair in the course of from one to six months.

METABOLISM OF XANTHINES

To the Editor:—A careful search through the literature has not revealed satisfactory answers for the following questions: Is there any information concerning the chemistry of aminophylline during its passage through the body? In what final form is aminophylline excreted in the urine and elsewhere? Might it have any influence on the production of uric acid stones? Might the dehydratoin with ammonium chloride, mercupurin or fluid restriction have any effect on the formation of uric acid stones in a case of myocardial insufficiency? I would greatly appreciate an answer to each of these questions unobtainable elsewhere. M.D., New York.

ANSWER.—The question of the influence of the ingestion of the methylated xanthines, 1,3,7-trimethyl xanthine (caffeine), 3,7-dimethyl xanthine (theobromine) and 1,3 dimethyl xanthine (theophylline) on the excretion of uric acid has been carefully studied in the human subject by Myers and Wardell (*J. Biol. Chem.* **77**:697 [May] 1928) and in the Dalmatian coach dog, which resembles man in its purine metabolism, by Hanzal (Dissertation, Western Reserve University, 1930). Aminophylline is a double salt or mixture of theophylline and ethylenediamine, containing not less than 70 per cent of theophylline, and is much more soluble than the free xanthine. Theophylline in this form was employed by Myers and Wardell in their experiments. These authors found about a 10 per cent increase in the excretion of uric acid after the ingestion of theophylline, although this represented somewhat less than 10 per cent of the theophylline ingested. In one of their series of experiments the uric acid was estimated by isolation and weighing, the figures checking closely the results obtained by two colorimetric methods. It seems fairly certain, therefore, that there is a small increase in the excretion of uric acid after the ingestion of aminophylline. It is difficult to say whether this increased excretion of uric acid is due to demethylation of this xanthine or is the result of a slight stimulation of metabolism. It is a well known fact that caffeine slightly increases the basal metabolism (about 5 per cent), and Myers and Wardell and others have found an increased excretion of uric acid after the ingestion of caffeine. There is one other complicating factor in the case of theophylline (1,3 dimethyl xanthine) that must be considered: 1,3 dimethyl uric acid gives the color reaction for uric acid and might be formed from theophylline by oxidation of the number 8 carbon. As Myers and Hanzal (*Am. J. Physiol.* **99**:458 [Oct.] 1929; *J. Biol. Chem.* **97**:lxix [July] 1932) have observed, this does appear to occur to a slight extent. In the case of caffeine and theobromine, Myers and Wardell determined the urinary excretion of purine base nitrogen after the ingestion of these two methylated xanthines and found that this was roughly equivalent to about 15 per cent of the amount ingested. The same would probably be true of theophylline.

If one considers the amount of extra uric acid excreted (about 10 per cent) as derived from theophylline by demethylation and oxidation, together with the increased excretion of purine base nitrogen, it is possible to account for only about 25 per cent of the theophylline ingested.

It seems doubtful, from the slight increase in uric acid excreted, that aminophylline could have any significant influence on the formation of uric acid calculi. It would probably have less influence than the liberal use of coffee (Mendel, L. B., and Wardell, Emma L.: Effect of Ingestion of Coffee, Tea and Caffeine on the Excretion of Uric Acid in Man, THE JOURNAL, June 16, 1937, p. 1805). From the information which is available in the literature it appears improbable that dehydration with ammonium chloride, mercupurin or fluid restrictions should lead to the formation of uric acid stones in myocardial insufficiency. Although the solubility of uric acid in the urine would be decreased by the increased urinary acidity resulting from the administration of ammonium chloride and there might be some increase in the formation of uric acid owing to the mercupurin therapy, this would probably be fully compensated for by the diuresis.

UNILATERAL VENOUS ENGORGEMENT IN TUBERCULOSIS

To the Editor:—A patient with long-standing skeletal tuberculosis has, since the appearance of amyloidosis (with markedly enlarged spleen and liver) a year ago, persistently shown dilated veins distinctly limited to the left half of the trunk. Can any anatomic explanation be offered for this distribution of distended veins? M.D., New York.

ANSWER.—The superficial veins of the thorax near the medial line drain into the internal mammary, the superior epigastric and the anterior intercostal vein. The latter two veins are tributaries to the internal mammary. From the side of the chest the lateral thoracic vein and the costo-axillary vein receive numerous tributaries before draining into the axillary vein. The azygos vein is a continuation upward of the ascending lumbar vein and lies on the right side of the front of the bodies of the thoracic vertebrae. At the level of the fourth thoracic vertebra it curves forward and enters the superior vena cava. It receives the intercostal veins of the right side with the exception of the first two or three, which join into a common trunk before entering the azygos vein. This vein has an anastomosis with the inferior vena cava and through the ascending lumbar vein connects with the iliac vein. This is an important communication in case of obstruction of the vena cava.

On the left, lying along the sides of the thoracic vertebrae, is the hemiazygos vein, which is a continuation upward of the ascending lumbar vein. At the level of the eighth or ninth thoracic vertebra it crosses to the right side and drains into the azygos vein. Four or five of the left lower intercostal veins are tributary to the hemiazygos vein. The left superior intercostal vein is formed by the joining of the second, third and fourth intercostals. This vein drains into the left innominate vein. However, at its lower end it frequently communicates with the accessory hemiazygos vein, which lies in the posterior mediastinum to the left of the fifth, sixth, seventh and eighth thoracic vertebrae. The accessory hemiazygos vein may either join the hemiazygos or pass across the seventh or eighth thoracic vertebrae to join the azygos vein. The fourth to the eighth intercostal veins on the left side are tributary to the accessory hemiazygos vein.

The superficial veins of the lumbar region communicate freely with the intercostal and lumbar veins through the dorsal and lateral perforating branches. Over the lower part of the anterior and lateral surfaces of the abdomen, the superficial epigastric and the superficial circumflex iliac veins drain blood into the great saphenous vein, which in turn is tributary to the femoral vein. The thoraco-epigastric vein joins with the superficial epigastric vein below and the superficial thoracic veins above. The valves of the thoraco-epigastric vein direct the blood downward below and upward above. However, the valves may be rendered incompetent when the vessel becomes enlarged. Thus there is free communication between the superficial veins of the thorax and those of the abdomen. The thoraco-epigastric vein communicates with the portal system in the region of the umbilicus through a vein in the round ligament. The parumbilical veins, which pass along the ligamentum teres to the abdominal wall, are spoken of as accessory portal veins, since they anastomose with superior and inferior superficial epigastric veins. Thus blood returning from the spleen and the abdominal part of the digestive tract ordinarily passes through the liver capillaries before reaching the heart. In certain diseases of the liver, however, which obliterate many capillaries so that the

blood flow is obstructed, it is only through the anastomoses between the portal system and the superficial veins of the abdomen in the region of the umbilicus that the return flow of blood is possible. In this event, because of the large volume of blood passing through the superficial veins of the abdomen, they become distended and the valves in the thoraco-epigastric become incompetent. Thus blood from the superficial epigastric veins flows freely into the superficial thoracic veins and back to the heart through the internal mammary, the axillary or even the axygos, hemiazygos and accessory hemiazygos veins. Again, obstruction of the inferior vena cava or its tributaries as low as the entrance of the saphenous into the femoral vein may result in marked enlargement of the superficial epigastric and superficial circumflex iliac veins, which in turn, through their free communication, results in enlargement of the superficial veins of the thorax. In this event, blood returns to the heart from the lower extremities through the superficial veins of the abdomen and the thorax.

In the case described in the question it is possible that the enlargement of the spleen is sufficient to cause enough pressure on the tributaries of the hemiazygos vein or this vein itself to obstruct the flow of blood toward the superior vena cava and thus dam back the blood in the tributaries which communicate freely with the superficial veins of the abdomen and thorax. It is also possible that pressure on the ascending lumbar vein or even on the iliac or femoral vein, even from a psoas abscess, would direct the flow of blood returning to the heart by way of the hemiazygos or the inferior vena cava to the superficial veins of the abdomen and thorax.

Although amyloidosis usually does not result in obstruction of the flow of portal blood through the liver, there may be enough associated cirrhosis to offer such obstruction. In this event the blood from the portal system would find its way through the parumbilical veins to the superficial veins of the abdomen and thorax. One would expect that there would be equal dilatation of the superficial veins on the two sides of the body. However, because of anatomic variations it is possible that the parumbilical veins anastomosing with the superficial veins on the left side are better developed than those on the right side. Again, the superficial veins of the abdomen and thorax may lie more deeply on the right side, so that they are not visible from the surface.

PREMATURE ORGASM AND TESTOSTERONE PROPIONATE

To the Editor:—A white man aged 26 complains chiefly of premature orgasm. He is in excellent health, is 5 feet 9 inches (175 cm.) tall and weighs 135 pounds (61 Kg.). He is of slight build, has a high pitched voice and has no hair on the chest. The genitalia are normal and the pubic hair is of normal distribution. Results of all laboratory work have been negative. Libido is normal or slightly above normal. Erection is normal and the only complaint is that already mentioned. Some authorities seem to consider this a form of impotence, and with the good results reported in the use of testosterone propionate in impotence I should like to know what you think of the use of this agent in such a case. Could any ill effects come from the use of this agent in a mature adult? If it is recommended, what dosage would you suggest? This patient has not responded to such treatment as prostatic massage, passage of sounds or instillation of mild silver nitrate.

M.D., Kentucky.

ANSWER.—In every case of premature orgasm, exact diagnosis must precede scientific treatment. One must know whether the condition is due to a congested prostate or prostatic urethra or to a weakness of the sexual muscles or to those surrounding the veins of the penis.

Although testosterone propionate would have no ill effect, it would in all probability have no beneficial effect either. Its use in establishing normal sexual activity is indicated only in those conditions which have definite testicular deficiency. It is of no value in psychic disturbances other than on a suggestive basis. A recent report on the status of testosterone propionate appeared in THE JOURNAL, May 13, 1939.

ANTICOAGULANTS DO NOT INTERFERE WITH BLOOD TYPING

To the Editor:—Can you tell me whether or not the citrating of blood would interfere with its use in typing and cross matching? This problem comes up for consideration in connection with blood banking. Does the presence of citrate in serum or saline suspension of cells interfere with cross matching?

ROBERT S. SMITH, M.D., Boise, Idaho.

ANSWER.—The addition of anticoagulants, such as sodium citrate and potassium oxalate, does not interfere with the use of blood for grouping and cross matching tests. This procedure is followed as a routine in many institutions when collecting samples of blood for grouping tests before a transfusion.

HIPPURIC ACID TEST OF LIVER FUNCTION

To the Editor:—A question has been raised as to the toxic effect on the liver cells of sodium benzoate, which is used (orally) in performing the so-called hippuric acid synthesis test for liver function, as worked out by Armand J. Quick. If this chemical is toxic to the liver cells in the doses recommended by this author, the test would logically be unsuitable in those cases of hepatic disease in which the test is particularly desired. What is the action of sodium benzoate (in doses used by Quick) on the liver cells?

KATSUJI KATO, M.D., Chicago.

ANSWER.—There is no direct or indirect evidence to indicate that sodium benzoate has any toxic effect on the liver.

The drug was formerly used in the treatment of rheumatic disease and has been given to human beings in doses as large as from 25 to 60 Gm. a day without producing any harmful effect. Quick's hippuric acid test has been performed on many patients with extreme degrees of injury to the liver without any appreciable toxic effects or without depressing other hepatic functions; slight gastric irritation has been noted in a few cases, but these symptoms are of a temporary nature. Because of the vulnerability of the diseased liver to hepatotoxic agents, it seems clear that if sodium benzoate had any untoward effect on the liver it could be easily demonstrated in such patients.

One may safely conclude that the administration of a single dose of sodium benzoate for testing hepatic function would have no effect on the liver cells which would interfere in any way with the validity of the hippuric acid test.

PROBABLE DERMATITIS FACTITIA

To the Editor:—A white woman aged 24, married, injured her knee nine years ago. The wound would not heal, although no infection was present. It finally healed after a skin flap operation was performed. Four years later she injured her back, and a section of the sacrum was removed. At this time it was noted that the skin would "crack," i. e. at first a fine red line would appear followed almost immediately by separation of the skin and subsequent bleeding, which was controlled by means of a skin clamp. The condition cleared and did not recur until the patient became pregnant one year later. A therapeutic abortion was performed at four months and the condition was again relieved. During the winter months of that year she had three such attacks, all of which seemed to be controlled by blood transfusions. Later a hysterectomy was performed and she had complete relief until nine months ago, at which time she fell downstairs and almost immediately the condition appeared again and has recurred every two months since this last accident. I have seen only the last three attacks, but they follow a definite course of events at each attack: there is a prodromal feeling of malaise and generalized pains, then nervousness followed by a feeling of extreme weakness. The skin is then affected with the initial lesion, beginning in an abdominal scar. At first it was believed that these lesions might be self inflicted, but on one occasion I noted that a thin red line appeared about 1 inch long and almost immediately began to separate and then began to bleed. At each attack anywhere from ten to thirty cracks may appear. After the attack the patient appears normal in every respect and the wounds heal by first intention. The patient has been given almost every known sedative; she has been given spleen extract, theelin and numerous other endocrine preparations. Blood transfusions at first ended the attacks but lately these have proved useless. The only effective treatment now seems to be complete surgical anesthesia, which has proved successful in the last three attacks. On numerous occasions the Wassermann reaction has been negative. Clotting and bleeding time are always within normal limits. The blood count has shown a gradual drop (the last count shows red cells 3,600,000, hemoglobin 70 per cent). The white count is consistently around 10,000. The differential count shows polymorphonuclear leukocytes 78 per cent, small lymphocytes 19 per cent, large lymphocytes 3 per cent. A sister died from sarcoma involving the colon. This patient has been admitted to many hospitals and has been seen by many specialists in the various branches of medicine. The literature has been searched but no similar case has been found. The diagnosis remains "skin cracking." I should like to know whether any other such case has been reported and if so what diagnosis was made and what treatment was suggested.

M.D., Pennsylvania.

ANSWER.—The occurrence of these attacks after injury and during pregnancy, the prodromes of malaise, pains, nervousness and weakness, temporary relief by surgical operation, therapeutic abortion under general anesthesia, the onset of lesions in a scar and their linear configuration are all typical of hysteria and the self-inflicted lesions often seen in victims of this disease. The suspicion that the lesions might be those of dermatitis factitia were well founded and should lead to a neurologic investigation. His statement that he watched a lesion as it developed is not wholly convincing to those who have studied such cases and know what remarkable cunning these patients possess. Is the physician sure that his attention was not diverted for a short time during the period of observation? It may be that hysteria is capable of causing spontaneous changes in the skin, for it is well known that anesthesia of the skin over large areas can be caused, and it is said that such areas do not bleed as readily as the normal skin. No convincing proof of such a possibility has been given, while the cases of self infliction by hysterical patients are common.

The linear shape of the lesions in this case suggest the dermatitis dysmenorrheica of Matzenauer and Polland, an eruption occurring at or near the menstrual period of women with dysmenorrhea. Many dermatologists, because of the resemblance of the lesions to those of dermatitis factitia, reject the theory of these writers, but Wise and Parkhurst, who studied a patient with such an eruption, believe that it is not self inflicted and think that hysteria was ruled out in their case. They also stress the careful and painstaking study of Matzenauer and Polland (Wise, Fred, and Parkhurst, H. J.: So-Called Dermatitis Dysmenorrheica, *Arch. Dermat. & Syph.* **2**:725 [Dec.] 1920).

If a careful study such as was made by the authors mentioned reveals no evidence that the eruption described in the query is self inflicted, the case should be reported in detail, for it is unique. At any rate the patient should be treated by a capable psychiatrist.

PAIN IN THE GLANS PENIS

To the Editor:—A well developed man aged 33 is normal in every respect except that on erection of the penis there is pain in the distal end of the glans penis which is so severe that the act of coitus cannot be completed. He explains the feeling as a "shortness of the muscles, as a stretching or pulling." He has been married for twelve years, is the father of two children, has enjoyed relations with his wife up to three and one half months ago, has had no illicit relations or intercourse and has never had gonorrhea. He has no discharge, swelling, sore or erythema now. The penis appears to be normal when flaccid and on erection. The prostate is normal in size and not tender. Physical examination is negative. He is mentally well and his wife is well. His business is good; he is not greatly worried except about this pain in the glans. Another way he explains this pain is "as after having coitus with a virgin, but the only difference is that there is no pain except on erection and is worse or aggravated by intercourse." He has had coitus with his wife two or three times a week regularly up to three and one half months ago. Furthermore, he still has the desire but as soon as erection occurs he has the pain and on entering pain is aggravated and coitus must cease and the act cannot be completed. His wife states that it is not in the least painful to her. I am at a complete loss as to the cause and as to treatment.

M.D., Texas.

ANSWER.—There are several possibilities to consider; first and foremost is the possibility that this man has a cavernitis; hence when the penis is engorged and erection takes place there is pulling and pain. One is justified in assuming such to be the case by the statement that the patient explained the feeling as a "shortness of the muscles." On the other hand, painful erections in an occasional case are due to other than inflammatory induration, such as induration due to leukemia. It will hence be necessary to look the patient over not only for local causes but for general causes. Some psychic problem or conflict must also be considered.

In summing up, the patient should have a complete physical examination, including complete studies of the blood as well as an attempt to determine the presence or absence of changes in the penis. If all of these examinations are negative he should have a neurologic examination. Of course if his trouble is due to an inflammatory condition such as a cavernitis the use of heat in the form of hot soaking and hot applications and the internal administration of potassium iodide are indicated. For the present he should refrain from sexual intercourse. On the other hand, if his difficulty is due to leukemia the treatment must be directed toward the leukemia and not toward the local condition. Finally, if this is on a neurologic or psychologic basis the treatment becomes self evident.

EFFECT ON DONOR OF BLOOD TRANSFUSIONS

To the Editor:—Could you give me any information you may have or any references in the literature touching on whether or not a donor giving his blood for transfusions is apt to suffer any acute or permanently bad results to his own health? I recall having read that such donors may complain of serious involvement of the liver or other organs. I do not believe that any person can give up a pint or more of his circulating blood without some latent consequence.

B. F. GALLANT, M.D., Long Island, N. Y.

ANSWER.—There has been no report in the literature concerning any permanently bad results to the health of persons giving blood for transfusions, provided this is not carried out to excess. Before there was better regulation of donors it was not uncommon to encounter donors with more severe anemias than the patient receiving the transfusion, and there can hardly be any doubt that this must have been detrimental to the general health of the donor. However, for most healthy adult male donors the withdrawal of from 400 to 500 cc. of blood every four to five weeks is apparently perfectly harmless. When large amounts (1,000 cc. or more) are rapidly drawn off at one time the donor may feel faint after the transfusion, but usually this sensation will pass off if he is kept lying down for from thirty to sixty minutes following phlebotomy. A rather common after-effect is one more of a psychic nature, and this occurs particularly with inexperienced donors and may follow an ordinary venipuncture or even a puncture of the finger as well as phlebotomy. Susceptible persons may suddenly go into partial or complete collapse, and at times it may be difficult to revive them. Donors experiencing such fainting spells may feel ill for several days after the venipuncture or phlebotomy, but there is apparently no permanent damage. One case has been reported of the death of a donor following a transfusion. It seems that after leaving the operating room the donor fainted and his head struck a concrete floor. The donor got up and went home, where he died of a fractured skull with intracranial hemorrhage.

BRONCHOGENIC CARCINOMAS

To the Editor:—What percentage of primary carcinoma of the lung has been recognized during the last five years? Has any etiology been definitely or even tentatively established, such as irritation from inhalation of dust emanating from tarvia highways? What are the usual clinical course, predominating symptoms, sites of metastasis and the like of that disease? Is hay fever (pollen sensitivity) a predisposing factor?

CLARENCE R. MORSS, M.D., Zumbrota, Minn.

ANSWER.—Somewhat more than 50 per cent of bronchogenic carcinomas have been recognized ante mortem in recent years. No definite cause is known, but as associated factors mechanical, infectious and chemical irritants seem to have a role. However, a definite relation to chemical irritation has not been established. Allergic disease is not known as a predisposing factor. The predominating symptoms are pain in the chest, dry cough, hemoptysis and loss of weight and vitality, but often the symptoms from metastases, depending on their location, overshadow those from the primary tumor. Metastases develop most frequently in the lymph nodes, liver, brain, adrenals and bones. Atelectasis of parts of the lung, caused by bronchial occlusion and frequently resulting in pulmonary abscess, changes the clinical course unfavorably. The duration of the disease from the time of diagnosis ranges from weeks to a few months and occasionally is several years. The only reliable cure has so far been found in surgical removal of the involved lung followed by high voltage roentgen therapy. Radiation therapy alone may have a palliative effect but is not curative.

CONTROL OF SMOKING HABIT

To the Editor:—Can you furnish me with a prescription for a pleasant, nonirritating, nonstaining mouth wash which may be used to remove the desire for tobacco when such a desire is present? Kindly omit name and address.

M.D., California.

ANSWER.—The "desire for tobacco" may be treated by the substitution of some other material which will produce actual unpleasant sensations whenever the tobacco is used, or by inhibition, persuading the subject of the reason for discontinuing the habit and hence developing opposing desires to counteract the one for tobacco. Substitutes such as chewing gum, gentian or chamomile roots, smoking nontobacco materials such as cubebs (no truly denicotinized tobacco product is yet available) and the like may replace the physical motor activity and even the immediate sensations of smoking but are generally ineffective for those desiring the effect of smoking. Lobelia, or lobeline sulfate, a common constituent of advertised "tobacco cures," produces pharmacologic effects similar to those of nicotine and has therefore been recommended as a substitute, but it often produces gastrointestinal symptoms and only temporary cessation of the desire by replacement, which is hardly advantageous.

The best known antagonist consists of the application of a 1 per cent solution of silver nitrate to the postpharynx or the use of a more dilute solution (a 0.5 per cent) as a mouth wash after meals. This results in a highly disagreeable taste whenever the subject attempts to smoke, which in that way tends to overcome the desire. The use of weaker silver solutions or a mild protein silver may be less unpleasant, less irritating and less staining at the time of application but it will be ineffective unless the attempt to smoke results in the unpleasant irritating sensation.

The production of anosmia by the application of zinc sulfate or similar agents to the olfactory mucous membrane and similar interferences with the sense of taste may diminish the enjoyment from smoking tobacco similar to the lessening of desire with any acute infection of the upper respiratory tract but will have no result on the desire for the pharmacologic effects of the nicotine.

"Moral suasion" or educating the subject regarding the reason for discontinuing the habit, especially with regard to the progress of already existing symptoms, such as extrasystoles

and amblyopia, is usually sufficient. The "withdrawal symptoms" from abstinence from tobacco are so mild when compared with the effects of opiate addiction that similar difficulty need not be anticipated. Many smokers cease to use tobacco for shorter or longer periods out of a whim, to test their self control or for economic, esthetic, hygienic or other reasons. A large proportion of them, however, resume the habit unless they are convinced of its ill effects on their own person.

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GYNECOMASTIA

To the Editor:—A man aged 47, 6 feet 1 inch (185 cm.) tall, weighing 173 pounds (78.5 Kg.), complains of a gradual enlargement of the breasts during the last two years. His general health has otherwise been good for many years and his weight has not varied during the last ten years. There is uniform symmetrical development of the two breasts. The nipples are fairly well developed and protrude. There is also a general uniform increase in the fatty tissue of the abdominal wall below the umbilicus and there are fatty cushions over the internal aspect of both knees. There is no urinary dysfunction and no difficulty in performing the sex act though there is a slight decrease in libido. The patient is annoyed only by the increase of the breasts and would like to have the condition corrected. Please suggest a line of investigation and specific treatment. If the latter is not available please suggest a plan of experimental treatment which could be tried. Please give a bibliography.

M.D., Pennsylvania.

ANSWER.—At birth the breasts of a child show hypertrophy as a result of hormone stimulation from the mother during the last three months of pregnancy. For from two to four months after birth, cystic dilatation takes place, after which time the breasts of both sexes are relatively quiescent until puberty.

Estrogenic substance is responsible for growth and branching of the mammary gland trees, possibly slight stimulation of the alveoli and development of the nipples in the female at puberty. In the male the breasts normally remain rudimentary, and within a few years their glandular elements atrophy to almost the degree of practical disappearance.

Geschickter, Lewis and Hartman (Tumors of the Breast Related to the Estrin Hormone, *Am. J. Cancer* **21**:828 [Aug.] 1934), writing of a condition which they term gynecomastia and which occurs most frequently in white men between the ages of 30 and 40, state: "It may be concluded, therefore, from histological and endocrine studies on the normal male and female breast at birth and at puberty, that the developmental response in mammary tissue at these periods to the female sex hormone, estrin, is homologous to that of gynecomastia."

Some observers believe that mastodynia in women is due to an excess of estrogenic substance, while others think that the condition is due to an insufficient amount of this hormone.

It would seem, since estrone is the stimulator of mammary development in the female, that painful and congested breasts would be due to an excess of hormone rather than to an insufficient amount.

Normal males and females secrete both estrogens and androgens, but under normal conditions of function the excess of hormones are those peculiar to each sex. Gynecomastia has been observed in relation to atrophy and tumors of the testicles, and in some cases to adrenal and pituitary disturbances.

Edwards, Shimkin and Shaver (Hypertrophy of the Breasts Due to Injections of Adrenal Cortex Extract in a Man with Addison's Disease, THE JOURNAL, July 30, 1938, p. 412) reported a case of hypertrophy of the breasts in a man aged 37 with Addison's disease to whom adrenal cortex extract had been administered. The hypertrophy and tenderness of the breasts subsided with omission of the extract and recurred when it was resumed.

In the case mentioned in this query no mention is made of pain, and it will be taken for granted that there is none. In this answer one cannot be definite as to the etiology of the condition in this man. His age, slight description and history suggest a beginning decrease in sex function. It is possible that the enlargement of the breasts is due to an accumulation of adipose tissue. In hypogonad states in both male and female the typical adipose deposits are located in the breasts, the mons and over the trochanters. The fact that the breasts are not painful as a result of the decrease of androgens supports this idea. That an excess of estrogenic substance is present is possible, but hardly probable. Again, adrenal cortex disturbance must be kept in mind. Just how the anterior pituitary could be responsible for the condition would be conjectural.

It might be well to make a series of quantitative determinations for estrogens and androgens. The injection of 25 mg. of testosterone propionate three times a week for one month might be tried but would be in the nature of an experiment. If results were obtained, the injection intervals might be lengthened to once or twice a week.

TYPHUS FEVER

To the Editor:—I should like to make some inquiry as to the course to expect in a case of typhus fever which is under my care. I understand that there is no specific treatment for this disease but would like to know what the convalescence is like and if any after-effects result if recovery occurs. This patient was hospitalized for four weeks and returned home. Everything remained normal, except for extreme prostration, for three weeks and now the whole picture of high fever, severe headaches, delirium and the like is repeating itself. Is this what one can expect and how long may these remissions continue? Is it true that if the patient goes through the first period he usually survives these relapses?

M.D., Pennsylvania.

ANSWER.—It is assumed that typhus fever has not been confused with typhoid.

While there seems to be no reason why a relapse of typhus fever cannot occur, no mention of its occurrence has been found in the literature. Second attacks occurring in the same person after an interval of months or years after the first infection have been observed. Convalescence in uncomplicated typhus fever is usually uneventful, but occasionally patients do have mental or nervous disturbances of a mild degree. Most patients recover and after-effects are uncommon. True relapses in rickettsial diseases seem to be rare.

On reading the query and noting the absence of data, one is apt to wonder on what basis a diagnosis of typhus fever was made. Endemic or murine typhus is uncommon in the winter months, and epidemic or louse-borne typhus is rare in Pennsylvania. The unusual "relapse" mentioned suggests the occurrence of some other disease such as encephalitis.

CONTAMINATED WOUNDS

To the Editor:—What strength of solution of mercury bichloride is advisable to use in irrigating contaminated wounds before suturing? What strength should be used to irrigate the cavity left after the removal of a sebaceous cyst or lipoma in the office as a prophylactic against infection? Is there any danger of mercury poisoning?

M.D., Minnesota.

ANSWER.—The use of mercury bichloride to irrigate contaminated wounds before suturing is not advised in any strength. Fresh wounds should be meticulously cleansed with prolonged washing with soap and water and irrigated with sterile water. Following removal of foreign bodies and devitalized tissue, the wound should then be closed without the use of any antiseptic. There is some, but rather slight, danger of mercury poisoning, but the chief objection to the use of any chemical is that it injures the delicate processes of repair. The use of mercury bichloride to irrigate a cavity left after the removal of a sebaceous cyst or lipoma is not recommended.

VITREOUS OPACITIES FROM HEMORRHAGE

To the Editor:—Are there any means, either operative or medical, other than application of ethylmorphine hydrochloride to the conjunctival sac and internal administration of iodide, for the treatment of vitreous opacities resulting from massive intra-ocular hemorrhages?

H. J. MCGINNIS, M.D., Seymour, Wis.

ANSWER.—There are several measures which have been tried for vitreous opacities such as that described, but the evidence in their favor is not convincing. One is the use of small doses of unfiltered x-rays. A 30 per cent skin dose or 80 roentgens may be used three times at intervals of three weeks without danger to the eye. There is some evidence that the resulting hyperemia tends to hasten the absorption of the opacities. If hemorrhages continue to occur, the use of ascorbic acid (from 1 to 2 grains [0.06 to 0.13 Gm.] a day) is a wise precaution. Removal of part of the vitreous has been carried out and some authors have reported clearing of the vitreous. There is, however, some danger in the procedure, and it is not frequently employed. A recent suggestion is the use of snake venom in small doses, but the results are not established in this type of case.

TWIN PREGNANCY: PROBABLE INTERRUPTION

To the Editor:—A woman aged 42 had her last menstruation Oct. 15, 1938, and there was a scanty and painless flow for two hours on November 12. She has two children and was toxic during both pregnancies but they terminated uneventfully. She was first seen November 21 and a diagnosis of probable pregnancy was made. Pernicious vomiting at once developed which was treated at home but rapidly became worse. She entered the hospital December 16 and was given ordinary treatment (fluids, dextrose, sedatives, corpus luteum). She did not improve, and on December 19, after consultation, a therapeutic abortion was done. The cervix would not admit a finger, and numerous large and small fragments of placenta were removed with ovum forceps. Escape of liquor amnii was not observed. Firm uterine and vaginal packing was inserted and removed in twenty-four hours but no more tissue was passed. She made a quick recovery but persisted in having some morning nausea and vomiting such as would be called normal in pregnancy. Several examinations by myself and my consultant indicate today that there is a progressing pregnancy, normal in every way. Should this pregnancy be allowed to continue when the rather marked degree of placental destruction accomplished at the time of the attempted therapeutic abortion is considered? Since liquor amnii was not evident in the operating room, is it or is it not probable that the fetus is now normal? With the large psychic factor now removed, the patient thinks that she might be reconciled to what was fundamentally an unwanted pregnancy if she could be sure that the child would be normal.

M.D., South Dakota.

ANSWER.—The inquiry indicates that the patient is now between three and three and one-half months pregnant. The history and observations would seem to indicate that she probably had a twin pregnancy with an interruption of one at the time of the operation and a subsequent continuation of the other. This seems to be the most plausible explanation of the clinical course. It is obvious that the fetus and attachments could not have been sufficiently damaged to cause its death, otherwise the pregnancy would not continue and the uterus grow at a normal rate. While the possibility of a hydatidiform mole should be considered, this unusual complication is unlikely in the absence of abnormal symptoms and signs. It is of course impossible to give any woman a positive assurance that the fetus resulting from any pregnancy will be normal and there is no way of diagnosing fetal malformations except certain skeletal deformities. These may be frequently diagnosed late in pregnancy by means of roentgenograms. Even this method lacks positiveness in many instances. It is possible to give the patient every reasonable assurance that with an apparently normal continuation of the pregnancy she has every reason to expect the birth of a normal baby.

GEOGRAPHIC DISTRIBUTION OF PSORIASIS

To the Editor:—Since I am writing an article on psoriasis, I would greatly appreciate it if you would please inform me as to what section of the United States has the most sufferers and why. If you do not have this information, would you please suggest where I could possibly get it.

M.D., Nebraska.

ANSWER.—The section of the United States having the most sufferers from psoriasis is undoubtedly the northern half of the country. The textbooks on dermatology indicate that from 2 to 4 per cent of all cutaneous disorders is psoriasis, but no definite studies of the percentage in various localities has been made. The general impression among dermatologists, however, is that there is less psoriasis in the southern portion of the country. Reports agree that in the tropics there are comparatively few cases of psoriasis. In numerous cases the condition comes under control while the patient is in a warmer climate.

CRYSTALLINE PROTEINS

To the Editor:—Abnormal growths as large as a man's head and apparently due to infection are fairly frequent on semitropical plants. The editorial on the structure of proteins in THE JOURNAL, Dec. 3, 1938, page 2120, leads me to inquire whether the crystalline protein mentioned was derived from a protein of the plant itself or from the protein of the infecting organism; also whether the crystalline protein had the cyclic structure of the plant fossil benzene derivatives and if so whether it is carcinogenic.

G. W. TYRRELL, M.D., Perth Amboy, N. J.

ANSWER.—The experimental evidence available at the present time does not permit a definite answer to the questions put forth. The recent investigation of Martin, Balls and McKinney (*Science* **87**:329 [April 8] 1938) suggests that the virus protein is synthesized at the expense of the normal protein. The investigation referred to is a preliminary communication, and extension and confirmation of this report are certainly required.

No data are available regarding the exact differences in structure between the crystalline virus protein and the proteins of the plant. Bawden and Pirie (*Brit. J. Exper. Path.* **19**:264 [Aug.] 1938) have studied the physical, chemical and serologic characteristics of the protein constituents of normal tobacco and tomato leaves and compared these properties with those of the plant virus proteins. Other than their high molecular weights, the normal plant proteins have little in common with the plant viruses that have as yet been isolated.

Data regarding the possible carcinogenic activity of virus proteins are not available; the inquirer is confusing cyclic structure with benzene nucleus.

TREATMENT OF INFECTED WOUNDS

To the Editor:—I have a patient with an open wound which cultures out Bacillus proteus and Staphylococcus albus. I am using the staphlo jell and have used various mild antiseptics. Do you know of anything specific for Bacillus proteus?

M.D., Wis.

ANSWER.—Extensive experience based on the treatment of many infected wounds in the war and elsewhere has made impressive the value of washing of infected wounds of the soft parts with soap and water. In addition to shaving the surface of the skin for a distance of 4 inches from the edges of the wound and of washing the surrounding skin twice a day with soap and water and gently washing the granulation tissue with soap and water, no other antiseptics are necessary on such wounds, and rapid cleansing of the wound and the appearance of healthy granulation tissue occurs.

HYDROCHLORIC ACID VAPORS

To the Editor:—I am writing to secure information relative to an 18 per cent solution of hydrochloric acid which has been used in industrial work in cleaning lavatories. Other than a bronchitis and an irritation of the nasal passages, can the fumes of such a solution cause gastric and gastrointestinal disturbances?

HARRY LAPIROW, M.D., Cincinnati.

To the Editor:—I am writing you today asking for some information of the effect of muriatic acid on the human system. I have under my care at the present time two patients, both of whom work at the radiator repair industry and who are constantly inhaling the fumes of this muriatic acid that is used in the work. They have symptoms of violent gastrointestinal disturbance, headache and backache with tenderness over the entire abdomen. We are having a mild epidemic of typhoid in our city, but I am unable to get either a positive blood or a positive stool culture on these patients. I will appreciate it, therefore, if you will send me any information available on this matter.

C. H. STARK, M.D., Cedar Rapids, Iowa.

ANSWER.—The constant exposure to vapors of hydrochloric acid will cause irritation of exposed mucous membranes. Thus the vapors will produce conjunctivitis, rhinitis and bronchitis. Hydrochloric acid has also a definite effect on dentition, producing inflammation of the gums and a loosening of the teeth. It is said that definite gastrointestinal irritation also results from the inhalation of these vapors with the production of nausea, vomiting and epigastric distress. Statistics and data on this subject, however, are limited, although there is more information on the effects of chlorine gas.

References:

Hirt, cited in Occupation and Health, Geneva, Switzerland, International Labour Office, 1930.

Loeper and others: Gastritis from Asphyxiating Gases, Presse méd. **23**: 240 (July 1) 1915; abstr. THE JOURNAL, Aug. 7, 1915, p. 562.

OPTOMETRISTS RECEIVE MISINFORMATION

To the Editor:—In the January 15 issue of the *Optical Journal and Review of Optometry*, page 20, I find the following statements on intraocular pressure. "The third nerve is a part of the somatic which innervates the muscles of more recent origin, and their function is all in a positive direction or to increase the hydro pressure. The sympathetic is the autonomous which innervates the muscles whose origin is in the very early stages of development, and their function is to keep the pressure down in coordination with the vegetative system." Can you elucidate these statements? They do not seem to agree with my conceptions of the physiology of the eye.

FREDERICK A. WIES, M.D., New Haven, Conn.

ANSWER.—Only too frequently appear questions that are inaugurated by hopelessly inaccurate statements appearing in journals that have no scientific supervision. Unfortunately the majority of the human race tends to believe what it sees in print as gospel truth without inquiring into the authenticity of the statements. Libel laws protect human beings but unfortunately medical topics have no such legal champions. Practically all of the fifty-seven varieties of the pseudomedical cults have publications of one sort or another. In these the various authors justify their extravagant claims by misquotations from authoritative sources or by statements snatched from the blue sky. To the uninitiated such articles are convincing, but no physician should allow himself to be taken in by these pseudoscientific libels.

DISLOCATION OF HEAD OF RADIUS

To the Editor:—Yesterday at a clinic I saw a patient with an anterior dislocation of the head of the radius of five years' duration. The patient complains of occasional attacks of pain accompanied by "purplish" discoloration in the region. Are there any operative procedures which might give a good result in a case such as this? Please quote references if possible. I haven't been able to find anything satisfactory in books to which I have access.

LUCIAN J. FRONDUTI, M.D., Jessup, Pa.

ANSWER.—The head of the radius is in close proximity to the posterior interosseous nerve. It is possible to resect the head of the radius not only without functional disability but in many cases with a considerable increase in function.

The purplish discoloration complained of may have nothing to do with the dislocation of the head of the radius but may be due to some local circulatory disturbance, possibly of venous or sympathetic nerve origin.

In considering a dislocation of the head of the radius, one must presuppose a rupture of its surrounding orbicular ligaments. There is a well known fracture-dislocation, known as a Monteggia dislocation, which is a fracture of the shaft of the ulna in connection with dislocation of the head of the radius.

References:

Speed, Kellogg: A Textbook of Fractures and Dislocations Covering Their Pathology, Diagnosis and Treatment, Philadelphia, Lea & Febiger, 1935.

Key, J. A., and Conwell, H. E.: Management of Fractures, Dislocations and Sprains, St. Louis, C. V. Mosby Company, 1937.

SUPERFECUNDATION, SUPERFETATION AND INTERVAL BETWEEN TWIN BIRTHS

To the Editor:—1. What is now considered to be the possibility of superfecundation and what is the latest time at which it can occur? 2. What is the supposed mechanism of the birth of twins days or weeks apart?

M.D., Illinois.

ANSWER.—1. Superfecundation is the impregnation of two different ova about the same time by sperms of different fathers. A white woman may bear twins, a black and a white child; a Negress may bear a black and a mulatto twin, but both combinations are possible with a single father. To prove superfecundation it is necessary that the twins be of a race different from the mother; e. g., a white woman delivers a Negro and a Mongolian.

The two impregnations must occur within a day or two to fertilize the two ova of one ovulation. Superfecundation occurs in multiparous animals.

Superfetation means the fertilizing of ova of two ovulations; i. e., a pregnancy supervening after one already occupies the uterus. This possibility has been strenuously denied by many authorities. The occasional great disparity in the size of the two children—reported as much as 1 to 7—has been ascribed to unequal development resulting from difference in nutrition. But superfetation does occur in human beings; e. g., a case of a healthy ovum of 4 weeks being found with a healthy aborted fetus of 10 weeks; also laboratory and clinical proof quoted by DeLee (ed. 7, p. 538). Superfetation occurs in multiparous animals not infrequently, and in the mare and cow on rare occasions. A mare served by a donkey and, a month later, by a stallion gave birth 9 months later to a mule and one month thereafter to a filly (Fleming: Veterinary Obstetrics, p. 127).

2. The mechanism of the causes of the delay in the delivery of the second twin days or weeks after the birth of the first is not understood, and a satisfactory explanation is not to be anticipated until what normally sets the process of labor in motion is known. Superfetation would be a dubious solution in the human race.

PERIODIC ALCOHOLIC EXCESSES

To the Editor:—I have been asked for advice in a case of dipsomania. A man aged 55, with a good physique, height about 70 inches (178 cm.) and weight 180 pounds (81.6 Kg.), is active and shows no signs of chronic alcoholism. His tongue is clean and there are no tremors or facial characteristics common to this condition. The family history is negative except that the father drank moderately. He has no brothers or sisters. He married a young woman in 1930 and has two normal, healthy boys aged 4 and 7. The wife does not drink or smoke, and since they seem to be happy in their married life there seems to be no exciting cause here. The patient had typhoid in 1911 and two or three attacks of influenza in 1915 and 1918. He has never been operated on. There is no history of delirium tremens or of institutional treatment. The heart is normal, the urine is normal and the blood pressure is 110 systolic, 60 diastolic; in fact all functions appear to be normal. He was with one employer for twenty years and is now retired on a moderate income. As near as I can find out, he leads a normal life and has traveled extensively. He says that he has used alcohol since his college days, but moderately. Usually he drinks beer and does not care for strong drink except when he is on a spree. He goes months—around 1933 he had no alcohol of any kind for eighteen months—at other times drinks two or three glasses of beer a day for months without going on a spree. He has attended social functions and taken two or three cocktails and thought nothing more of it. I cannot seem to find out how he happens to get started. After a few days of drinking, from four to seven, he suddenly stops of his own accord. He remains in bed two or three days and then gets back into good condition in a short time. The attacks have no regularity—may be two or three in as many months and then a year or more between attacks. I am in hopes that there may be some routine, with or without drugs, that he could follow to lessen if not entirely do away with this disease. Any information will be most acceptable.

W. G. STEADMAN, M.D., Miami, Fla.

ANSWER.—The periodic sprees are probably due to psychic causes in spite of the negative history. It is likely that a careful inquiry would elicit a history of troubles from which he is trying to escape. It is possible that the attacks could be prevented if the patient would consult his physician when he feels that a spree is imminent. Possibly at this time a little sympathetic psychotherapy with or without the use of sedatives such as bromides, phenobarbital or paraldehyde might be helpful.

TOXICITY OF OCTYL ALCOHOL

To the Editor:—Will you kindly inform me as to the toxicity of vapors from normal octyl alcohol (capryl alcohol). The vapors escape from a condenser during distillation.

R. J. FOSTER, M.D., New Philadelphia, Ohio.

ANSWER.—Octyl alcohol ($C_8H_{17}OH$) lately has come into extensive use as an antifoaming agent. It is used on such a large scale as to be marketed in carload lots. Among other processes, it is used in connection with dehydrating lubricating oil, the printing of textiles, water sprays used for air conditioning, the manufacture of paper, photographic work, insecticide sprays and the like. While little is known about its toxic properties, its extensive use with apparent impunity prompts the belief that its toxicity for exposed workmen is of low order. This substance possesses a fairly disagreeable odor, which in some instances may be a deterrent to its use.

A number of studies have been made on the action of octyl alcohol on experimental animals: Octyl alcohol dissolved in ethyl alcohol provokes a drop in arterial pressure, and after repeated injections death may occur. Intravenous injections of octyl alcohol promote diuresis. A mild local anesthetic property is possessed by this alcohol. Clotting time is increased as a result of the action of octyl alcohol when injected intravenously. Additional data related to pharmacologic action may be found in the following references:

1. Clerc, A.; Stern, J., and Paris, R.: Further Research on the Action of Octanol, *Compt. rend. Soc. de biol.* **116:** 600, 1934.
2. Macht, D. I., and Davis, Mary E.: Local Anesthetic Properties of Some Aliphatic Alcohol, *Proc. Soc. Exper. Biol. & Med.* **30:** 1294 (June) 1933.
3. Clerc, A.; Stern, J., and Paris, R.: The Action of Primary Octyl Alcohol (Octanol) and of Some Tensio-Negative Compounds on the Kidney, *Ann. de méd.* **38:** 32 (June) 1935.
4. Clerc, A.; Paris, R., and Stern, J.: Action of Octyl Alcohol on the Arterial Pressure and Surface Tension of the Blood of an Animal, *Compt. rend. Soc. de biol.* **111:** 774 (Dec. 9) 1932.

RECURRENCE OF LYMPHOID TISSUE AFTER TONSILLECTOMY

To the Editor:—What is the incidence of return of some varying amount of tonsil tissue after tonsillectomies done in children 3 years of age and how soon afterward may some such tissue appear?

M.D., New Jersey.

ANSWER.—There are no reliable statistics on the incidence of return of tonsil tissue in the pharynx of children tonsillectomized at the age of 3 years. Recurrence is dependent on a number of factors, not all well understood. Among these factors is age. There is a normal tendency toward hyperplasia of all the lymphatic structures in Waldeyer's ring in the first few years of life. Removing the tonsils at an early age leads often to compensatory hypertrophy of the surrounding lymphatic structures as well as to recurrence in the operative site. Hence, the younger the person at the time of operation the more apt is recurrence to take place. Furthermore, some persons show a special tendency toward hyperplasia. These will tend to suffer from recurrences.

Early reappearance of lymphoid tissue on the tonsillar fossa speaks for an incomplete operation. Late recurrence, sometimes several years after a technically well performed removal, is possibly due to the lymphatic structures present in the tunica propria of the mucosa, which grows in to heal the site of operation.

Medical Examinations and Licensure

COMING EXAMINATIONS

STATE AND TERRITORIAL BOARDS

Examinations of state and territorial boards were published in THE JOURNAL, May 27, page 2197.

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: Parts I and II. Medical centers having five or more candidates desiring to take the examination, June 19-21 and Sept. 11-13. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th Street, Philadelphia.

SPECIAL BOARDS

AMERICAN BOARD OF ANESTHESIOLOGY: An Affiliate of the American Board of Surgery. *Written.* Various places throughout the United States, Sept. 9. Applications must be filed by July 11. *Oral.* Part II. Philadelphia, Oct. 14-15. Sec., Dr. Paul M. Wood, 745 Fifth Ave., New York.

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY: Philadelphia, Oct. 30-Nov. 1. Sec., Dr. C. Guy Lane, 416 Marlboro St., Boston.

AMERICAN BOARD OF INTERNAL MEDICINE: *Written.* Various sections of the United States, Oct. 16 and Feb. 19. Formal application must be received before Aug. 20 for the Oct. examination and on or before Jan. 1 for the Feb. examination. Sec., Dr. William S. Middleton, 1301 University Ave., Madison, Wis.

AMERICAN BOARD OF OPHTHALMOLOGY: *Written.* Various cities of the United States, Puerto Rico and Canada and in Honolulu, Aug. 5. *Application must be received before July 1. General Oral.* Chicago, Oct. 7. Sec., Dr. John Green, 6830 Waterman Ave., St. Louis, Mo.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: Boston, January. Sec. Dr. Fremont A. Chandler, 6 N. Michigan Ave., Chicago.

AMERICAN BOARD OF OTOLARYNGOLOGY: Chicago, Oct. 6-7. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.

AMERICAN BOARD OF PEDIATRICS: Cincinnati, Nov. 15. Appointments must be made before July 15. Sec., Dr. C. A. Aldrich, 723 Elm St., Winnetka, Ill.

California February Examination

Dr. Charles B. Pinkham, secretary, California State Board of Medical Examiners, reports the written examination held at Los Angeles, Feb. 7-9, 1939. The examination covered nine subjects and included ninety questions. An average of 75 per cent was required to pass. Fifty-seven candidates were examined, fifty-three of whom passed and four failed. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
College of Medical Evangelists		(1937)	78.6, 79.4, (1938) 75.8, 78, 82.7
Stanford University School of Medicine		(1937)	90.1
Yale University School of Medicine		(1936)	81.1
George Washington University School of Medicine		(1938)	87.1
Emory University School of Medicine		(1938)	86.3
Northwestern University Medical School		(1938)	84.2,* 84.6*
Rush Medical College		(1937)	85.9, 87.6, 88.4, (1938) 76.8, 84.3, 86.1, 89.8
School of Medicine of the Division of Biological Sciences		(1938)	87
University of Illinois College of Medicine		(1938)	81.7,* 88.6
State University of Iowa College of Medicine		(1938)	84.1
Johns Hopkins University School of Medicine		(1936)	82.4
Harvard Medical School		(1937)	81.4, 84.7, (1938) 82.9, 85.7
University of Michigan Medical School		(1937)	81.2, 88
University of Minnesota Medical School		(1938)	86.1*
Washington University School of Medicine		(1938)	77.7, 80.9, 82.6, 83.1
Creighton University School of Medicine		(1938)	76.9, 82.3
University of Nebraska College of Medicine		(1937)	83.2, (1938) 79.1, 86.9
New York University College of Medicine		(1938)	92
University of Oklahoma School of Medicine		(1938)	82.4
University of Oregon Medical School		(1938)	86.9, 88.4
University of Pennsylvania School of Medicine		(1937)	84.3
University of Tennessee College of Medicine		(1938)	79.3, 82.1
University of Wisconsin Medical School		(1938)	85.4, 86
McGill University Faculty of Medicine		(1937)	78.4
Medizinische Fakultät der Universität Wien		(1923)	75.8, (1936) 78.4
Ludwig-Maximilians-Universität Medizinische Fakultät, München		(1921)	84.6
Universität Rostock Medizinische Fakultät		(1923)	82.4

School	FAILED	Year Grad.	Per Cent
Stanford University School of Medicine		(1936)	72.3
Marquette University School of Medicine		(1938)	73.4
Johann Wolfgang Goethe-Universität Medizinische Fakultät, Frankfurt-am-Main		(1922)	62.1
Latvijas Universitäte Medicīnas Fakultäte, Riga		(1928)	70.4

Forty-nine physicians were licensed by reciprocity and thirteen physicians were licensed by endorsement from January 3 through March 17. The following schools were represented:

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Arkansas School of Medicine		(1928)	Arkansas
University of Colorado School of Medicine		(1932)	Colorado
Howard University College of Medicine		(1925)	Penna.
Chicago College of Medicine and Surgery		(1913)	Illinois
Northwestern University Medical School		(1929)	N. Dakota, (1931) Michigan
Rush Medical College		(1900)	S. Dakota, (1921) Illinois
University of Illinois College of Medicine		(1927)	Illinois
State University of Iowa College of Medicine		(1928), (1935, 2)	Iowa
University of Kansas School of Medicine		(1931)	Kansas, (1933) Wisconsin
Baltimore Medical College		(1898)	Mass.
University of Maryland School of Medicine and College of Physicians and Surgeons		(1936), 1937)	Maryland
Harvard Medical School		(1900)	Penna., (1935) Mass.
Detroit College of Medicine		(1898)	Michigan
Detroit College of Medicine and Surgery		(1927)	Florida
University of Michigan Medical School		(1933), (1935)	Michigan
University of Minnesota Medical School		(1935)	Illinois, (1921), (1932, 2), (1934), (1936) Minnesota
Creighton University School of Medicine		(1931)	Nebraska, (1927), (1935) Ohio
University of Nebraska College of Medicine		(1924),	(1928), (1935), (1936) Nebraska
Columbia University College of Physicians and Surgeons		(1915)	New York, (1927) Connecticut
New York Homeopathic Medical College and Flower Hospital		(1926)	New York
University of Oklahoma School of Medicine		(1928)	Oklahoma
University of Oregon Medical School		(1935)	Oregon
Jefferson Medical College of Philadelphia		(1903)	Penna., (1934) Missouri
Temple University School of Medicine		(1932)	Michigan
University of Pennsylvania School of Medicine		(1930)	Kansas, (1931) Pennsylvania, (1932) Minnesota
University of Texas School of Medicine		(1937)	Texas
Marquette University School of Medicine		(1937)	Wisconsin

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
College of Medical Evangelists		(1934)	N. B. M. Ex.
Stanford University School of Medicine		(1935), (1937)	N. B. M. Ex.
Yale University School of Medicine		(1933, 2)	N. B. M. Ex.
Northwestern University Medical School		(1934)	N. B. M. Ex.
Rush Medical College		(1930)	N. B. M. Ex.
Johns Hopkins University School of Medicine		(1909)	U. S. Navy
Cornell University Medical College		(1935)	N. B. M. Ex.
University of Oregon Medical School		(1931)	U. S. Navy
Hahnemann Medical College and Hosp. of Philadelphia		(1933)	U. S. Navy
Jefferson Medical College of Philadelphia		(1938)	U. S. Navy
Medical College of the State of South Carolina		(1916)	U. S. Navy

* This applicant has completed the medical course and will receive the M.D. degree on completion of internship.

Book Notices

Clinical Electrosurgery. By Gustavus M. Blech, G.C.S., G.C.G., M.D., Consulting Surgeon Westlake Hospital, Chicago, Illinois. With chapters by Hector Alfred Colwell, M.B., Ph.D., D.P.H., Senior Assistant in Cancer Research Department Middlesex Hospital, London, and Brian Wellington Windeyer, F.R.C.S., D.M.R.E., Radium Officer Middlesex Hospital, London, England. Cloth. Price, $4. Pp. 389, with 34 illustrations. New York, Toronto & London: Oxford University Press, 1938.

Electrosurgical methods have come to fill a role in both major and minor operations. The ballyhoo of apparatus salesmen of a decade ago, promising every general practitioner that he could by the turn of a knob of a diathermy machine operate on tonsils and hemorrhoids, has been largely replaced by a realization that specially constructed electrosurgical apparatus must be painstakingly used by competent surgeons and other specialists. However, there has been a decided dearth of an authoritative textbook on the subject. The present volume fills this need. Part I is devoted to general considerations. The chapter on the historical development of electrosurgery is by H. A. Colwell. Other chapters deal with electrosurgical procedures, equipment, general technic, indications and limitations and nomenclature. A final chapter, on the radiotherapy of neoplasms, is by Windeyer and Colwell. In his own chapters the author has avoided going into complicated physics or a description of apparatus and presents the technical aspects of the general technic and the clinical applications lucidly and critically. The details on anesthesia and operative procedures and the advice for the gradual acquisition of a proper technic are comprehensive. The author puts strong emphasis on the use of electrosurgical measures in the treatment of malignant neoplasms and advocates biopsy by electrotomy as the only safe procedure. Part II comprises the major part of the volume and deals in successive chapters with operations on the skin, the head and spine, the face and neck, the thorax, the abdomen, the genitourinary apparatus, the female pelvis, the extremities, the nose, throat and larynx and the eye. The author limits his recommendations to methods and indications which he considers thoroughly tried.

Die fetale und postfetale Tuba Eustachii: Anatomisch-histologische Untersuchungen. Von Adolf Schwarzbart. Extrait des Mémoires de l'Académie polonaise des sciences et des lettres, Classe de médecine, 1938. Paper. Pp. 160, with 80 illustrations. Cracow: Imprimerie de l'Université, 1938.

Here is a richly illustrated work devoted chiefly to a study, anatomic and microscopic, of the eustachian tube. The author has covered his ground with a thoroughness reminiscent of the prewar Teutonic school. He gives the history of previous investigations and a summary of present knowledge of the eustachian tube. A discussion of points of embryologic interest, a survey of comparative anatomic details and a review of current notions relative to the physiology of the eustachian tube are presented. The author's material was human and animal, chiefly human and obtained from several dozen fetuses ranging in age from 5 to 10 months and from about sixty-five infants, children and adults. With great detail he discusses the anatomy and histology of the eustachian tube in the light of his observations, leaving, it would appear, little else to be done. For the anatomist and perhaps the otologist deeply interested in the subject, this work offers in one volume an immense amount of detail not to be had, as far as can be determined, anywhere else.

The Pituitary Gland: An Investigation of the Most Recent Advances. The Proceedings of the Association for Research in Nervous and Mental Disease, New York, December 28th and 29th, 1936. Editorial Board: Walter Timme, Angus M. Frantz and Clarence C. Hare. Association for Research in Nervous and Mental Disease, Vol. XVII of a Series of Research Publications. Cloth. Price, $10. Pp. 764, with 160 illustrations. Baltimore: Williams & Wilkins Company, 1938.

The Association for Research in Nervous and Mental Disease in previous years has had similar symposiums on various topics of interest in its field. This volume represents three symposiums concerning the anatomy and the physiology of the pituitary gland and a series of articles of interest largely from the clinical point of view. It is profusely illustrated, and the material is the most recently collected on this subject. Of particular interest was the suggestion by Dr. Timme that the regions with a preponderance of cases of the pituitary syndrome are almost identical with the areas commonly called the "goiter belt." Notwithstanding the vast amount of material here assembled, it becomes promptly apparent to the reader that exact knowledge concerning the gland and its functions is still in the early stages of development. The evidence is clear that the pituitary must be considered as part of the glandular chain and that much knowledge must await suitable integration of information concerning each of the portions of this interlocking directorate of the human body.

Handbuch der inneren Medizin. Begründet von L. Mohr und R. Staehelin. Herausgegeben von G. v. Bergmann und R. Staehelin unter Mitwirkung von V. Salle. Band III: Krankheiten der Verdauungsorgane. Teil 1: Mundhöhle, Speiseröhre, Magen. Teil 2: Darm, Bauchfell, Bauchspeicheldrüse, Leber und Gallenwege. Bearbeitet von W. Baumann, et al. Third edition. Paper. Price, 108 marks. Pp. 789; 791-1514, with 504 illustrations. Berlin: Julius Springer, 1938.

This volume is devoted to a consideration of the disorders and diseases of the entire digestive tract, including the liver and biliary passages, pancreas and diaphragm. The extensive clinical and pathologic consideration is preceded by a brief but concise summary of the anatomic and physiologic aspects. As is characteristic of Teutonic writings, the references to the literature are almost exclusively German, but many of the most important contributions of English, American and French investigators are mentioned. Diseases of the mouth and esophagus are well portrayed by Gigon and Lüdin. The chapter on diseases of the stomach was written by Katsch and Kalk, two distinguished specialists in the field of gastro-enterology. Von Bergmann contributed an article on the pathogenesis of ulcer in which he ascribes much importance to the spasmogenic or neurogenic theory with which his name is closely identified.

Gastritis is exhaustively covered by Katsch, his description reflecting the importance with which this entity is regarded in central Europe. Until recently the subject has not been given deserved consideration in this country. The colored plates on pages 452 and 453, depicting the gastroscopic appearance of the acute and chronic forms of gastritis, are some of the finest extant. In fact, nearly all the illustrations, particularly the reproductions of roentgenograms, are excellent. Diagnostic laboratory procedure with reference to the various organs is discussed in considerable detail. In the treatment of ulcer Kalk looks with disfavor on antacids and advocates the use of bismuth compounds and atropine. In cases in which the ulcer is refractory he still makes use of nonspecific forms of protein therapy. He greatly favors gastric resection in the surgical treatment of all ulcers not responding favorably to medical management, and in his experience about half of the patients submitted to gastrojejunostomy had recurrences. In the treatment of gastric hemorrhage he takes a conservative point of view, especially when the patient is less than 50 years old.

The chapter on diseases of the liver and biliary passages was contributed by two authors less well known to the English speaking members of the profession, Dr. Stroebe and Dr. Schweigk, both of Berlin. It is, however, one of the most complete in the volume. The observations on the physiology and functional pathology of the organ by the junior author and the articles on special pathology by Stroebe are interesting and instructive. Naturally the theory of serous inflammation conceived by Roessle and Eppinger is given much consideration. Henning and Baumann contribute the chapters on diseases of the intestine and diaphragm. Entities such as regional ileitis, syphilis and ulcerative gastritis are treated rather briefly, considering their growing importance.

The new edition of the handbook easily measures up to the high standards set by preceding editions. The editorship in itself would be a guaranty of such excellence. To those familiar with the language and with special interest in this field of medicine it is heartily recommended.

The Medical Press and Circular 1839-1939: A Hundred Years in the Life of a Medical Journal. By Robert J. Rowlette, M.D., F.R.C.P.I. Cloth. Pp. 127, with 10 plates. London, 1939.

This book was published in celebration of the hundredth anniversary of the *Medical Press and Circular*, which was founded in Dublin in January 1839 under the title of the *Dublin Medical Press*. The author was for many years Irish editor. The *Medical Press* in 1866 absorbed the *Medical Circular*, a London periodical founded in 1852. During its Dublin days this journal took an active interest in bettering the position of the members of the medical profession in government employ and in the development of the organization of the profession. In both earlier and later years it maintained a constant warfare against quackery and unprofessional conduct, particularly of those in high places. Such warfare brought the journal into difficulty at times, but only once was it taken into the courts and on that occasion the costs were defrayed by public subscription. So-called medical politics played a part in the editorial policy, but that was far from being the major interest. In its early volumes, among other things were the proceedings of the Royal Society of London, of the Royal Irish Academy, of the Academy of Sciences of Berlin and of the Zoological Society of London. As time went on the scope of the journal was narrowed to medicine, and in recent years the *Medical Press and Circular* has pursued the policy of providing concise articles on the latest accepted methods of diagnosis and treatment. The details of the long life of this journal are interestingly related by the author. In appearance the book, printed on double edged cream antique laid paper, is artistic. There are ten plates, some of which are portraits of the earlier editors.

Social Work Year Book 1939: A Description of Organized Activities in Social Work and in Related Fields. Russell H. Kurtz, editor. Fifth issue. Cloth. Price, $3.50. Pp. 730. New York: Russell Sage Foundation, 1939.

This constitutes the fifth issue of a description of organized activities in social work and related fields. A considerable number of contributors are responsible for the material included. Unfortunately the work bears too largely the stamp of the field of social service and there is little to indicate any point of view except that point of view. For instance, medical care is covered by Michael M. Davis and health insurance by I. S. Falk. In reference to surveys of medical needs there is not the slightest mention of the American Medical Association except to point out that it opposed some of the conclusions of the Committee on the Costs of Medical Care. In the discussion of new plans for medical care the organized medical profession is put in the position of opposing everything; the reader is in fact given a

completely biased picture of the entire situation. If the publisher had been concerned with presenting to the readers an actual picture of the status of the various fields which are discussed, he might at least have indicated the existence of the diverse points of view. The book is, however, useful as a guide to the extent of activities in the field of social work.

Praktische Anatomie: Ein Lehr- und Hilfsbuch der anatomischen Grundlagen ärztlichen Handelns. Von T. von Lanz und W. Wachsmuth. Band I, Teil 4: Bein und Statik. Cloth. Price, 49 marks. Pp. 485, with 342 illustrations. Berlin: Julius Springer, 1938.

Von Lanz was a professor of anatomy at the University of Munich; Wachsmuth was dozent in surgery at the University of Bonn. This book deals with the lower extremity; one on the upper extremity was published three years ago; parts dealing with the rest of the body are in preparation. The authors and the publisher have produced an extraordinarily beautiful, scholarly and well illustrated work. The title "Praktische," or applied, anatomy suggests that surgical and clinical anatomy will be presented. That expectation is abundantly fulfilled both in the text and in the numerous and excellent illustrations. The results of injury, the relation of muscular action to fractures, the desirable sites of amputation and of ligation of vessels, the collateral circulation, the best surgical approaches, the results of disease of the peripheral nerves all are well treated. But the book presents much more than this. It is one of the most beautiful books in the literature on descriptive, topographic, functional and developmental anatomy. The physical anthropology of the lower extremity, the action of muscles, the mechanics of joints, the range of motion and normal variations in this range and the mechanics of the circulation of blood in arteries, veins and capillaries are presented in text and illustrations with thoroughness and clearness. The illustrations are new and of unusual beauty. The general nature of the book may be inferred from their character. Two thirds are devoted to normal anatomy, twenty-two to growth and development, six to physical anthropology, thirty to function and over forty to purely clinical subjects. Thirty-two pages is devoted to a thorough and well classified reference to the literature and forty to an excellent and serviceable index. The appearance of further parts will be eagerly awaited by anatomists, physicians, surgeons, physical anthropologists and students.

Gould's Pocket Pronouncing Medical Dictionary of the Principal Words Used in Medicine and the Collateral Sciences with an Appendix Containing Complete Tables of the Arteries, Bones, Chemical Elements, Hormones, Micro-Organisms, Muscles, Nerves, Prefixes and Suffixes, Phobia's Signs and Symbols, etc., Also a Physicians Dose-List of Drugs with Their Incompatibilities, and a Veterinary Dose Table Both in the English and Metric Measures, and Based Upon the Eleventh Revision U. S. Pharmacopœia. By the Late George M. Gould, A.M., M.D. Revised by C. V. Brownlow. Eleventh edition. Fabrikoid. Price, $2; Thumb Index $2.50. No pagination. Philadelphia: P. Blakiston's Son & Co., Inc., 1939.

The eleventh edition of this well known dictionary contains more than 40,000 words of medical import. It includes a number of tables on hormones, bacteria, signs, symbols and abbreviations, and doses. Many of these are placed in the back of the book as an appendix. This is a useful volume and can be carried in a large pocket or in a physician's bag.

Cancer: An Inquiry into the Extent to Which Patients Receive Treatment. By the Hon. Sholto Mackenzie, M.D., M.R.C.P. Ministry of Health, Reports on Public Health and Medical Subjects, No. 89. Paper. Price, 9d. Pp. 41. London: His Majesty's Stationery Office, 1939.

The objective of the inquiry was "to obtain information as to the number of persons with cancer who received treatment and the circumstances under which treatment was, or was not, received. For this purpose data derived from the histories of those who had died of cancer have been utilised." The histories of 3,303 patients, which it was felt could "fairly be considered as a reasonably representative sample," were thus studied. Of these 2,420, or 73 per cent, did not obtain treatment. There were 418, or 12 per cent, who first sought advice within four weeks of death; 237, or 7 per cent, refused treatment; 169, 5 per cent, suffered from concomitant disease which rendered treatment difficult or impossible; 426, or 13 per cent, were too old for treatment, and 657, or 20 per cent, were cases in which the condition was too advanced for treatment. The cases were then analyzed to determine whether the location of the cancer was such as to have given a reasonable probability that treatment might have been helpful. Forty-two per cent of 312 who refused treatment gave as their reasons dislike of the hospital, treatment considered useless or fear or they preferred to remain at home. A similar study (Lombard, H. L.: Education a Major Need in Adequate Medical Care, THE JOURNAL, Nov. 5, 1938, p. 1747) conducted by the Massachusetts Department of Public Health found that 37.4 per cent of the "persons dying of cancer without reporting for treatment" after cancer had been diagnosed gave similar reasons. There may be some significance in the fact that not once in the entire report is any reference made to health insurance as a means of detecting incipient cancer.

Consolidated Indices Embracing Transactions of the American Roentgen Ray Society (1903-1908), American Quarterly of Roentgenology, Volumes I-V (1906-1913), American Journal of Roentgenology, Volumes I-IX (1913-1922), American Journal of Roentgneology and Radium Therapy, Volumes X-XXXVIII (1923-1937). Author and Subject: 1903-1937. Compiled under the direction of the Publication Committee and the Editorial Office of the American Roentgen Ray Society. Cloth. Price, $12.50. Pp. 451. Springfield, Illinois: Charles C. Thomas, 1939.

The publisher has here made available a complete index in the field of roentgenology, embracing the transactions of the American Roentgen Ray Society from 1903 to 1908 and material from three of the leading journals in the field of roentgenology for long terms of years. The index covers not only the transactions of the society and the original articles, editorials and biographic and historical sketches that have been published but also the abstracts from both domestic and foreign journals. As this material concerns the beginnings of our knowledge of roentgenology, the index constitutes an invaluable guide to material of permanent historical importance.

Mundherde und Gelenkrheumatismus: Ein Beitrag zur Bakteriologie der oralen Herdinfektion. Von Hofrat Dr. Franz Schick. Paper. Price, 7.50 marks. Pp. 86, with 11 illustrations. Leipzig: Johann Ambrosius Barth, 1938.

The author believes that the teeth are the only controllable foci. Oral infection is only one of numerous foci, but it is important since the mouth is the great portal of entry to the gastrointestinal tract and is in intimate relationship to the upper respiratory tract, paranasal sinuses, mucosa, teeth, salivary ducts, tonsils and polypous growths. Schick thinks that the American allocation of the teeth as the focus in 10 per cent of cases is too conservative. The tonsils are second in importance. The author describes a gram-labile micrococcus which he and Fischer isolated. This organism was found in the blood stream of five of seven rheumatic patients; it was present in tonsils, granulomas and the pulp of dead teeth. Its pathogenicity is low. Other subjects considered are the blood picture, which is not characteristic, focal infections, polyarthritis rheumatica from the standpoint of pathologic anatomy and experimental work on Micrococcus Fischer-Schick. A large bibliography is appended

Traité de thérapeutique clinique. Par Paul Savy, professeur de clinique médicale à l'Université de Lyon. Tomes I, II, et III. Second edition. Cloth. Price, 450 francs per set. Pp. 958; 959-2075; 2077-2776. Paris: Masson & Cie, 1938.

The fact that a second edition appears within two years of the first edition is evidence of the popularity of this treatise. A department representing the dermatologic and urinary specialties has been added, and the book has been brought down to date; otherwise the arrangement of the work is the same as in the previous edition. The practicability of the work is evident throughout, as is shown among other things by the introduction of illustrative prescriptions useful in the treatment of various diseases. The first volume deals with the treatment of pain, syphilis, tuberculosis, cancer, gastrointestinal disturbances and diseases of the liver and pancreas and concludes with the diseases of blood and blood-making organs. The second volume includes diseases of the heart and blood vessels, kidneys, respiratory apparatus and nervous system. The third volume includes the treatment of disturbances of the endocrine glands, allergy, dyscrasias, infectious diseases and intoxications. The work can be recommended for its exposition of the generally accepted practice of medical treatment in France.

Whitla's Dictionary of Treatment Including Medical and Surgical Therapeutics. By R. S. Allison, M.D., M.R.C.P., Physician with Charge of Out-Patients, Royal Victoria Hospital, Belfast, and C. A. Calvert, M.B., B.Ch., F.R.C.S.I., Assistant Surgeon, Royal Victoria Hospital, Belfast. Eighth edition. Cloth. Price, $9. Pp. 1,285. Baltimore: William Wood & Company, 1939.

Sir William Whitla, a prominent physician of Belfast, Ireland, wrote this book and edited it through seven editions. He died in 1933 and so many advances have been made since that it was necessary for new editors to rewrite it. Sir William's original plan of dealing with each subject from the general practitioner's point of view has been followed. In addition to the editors there are ten special contributors, all members of the Belfast school. As the title indicates, they follow the dictionary plan, but there is an index in the back. The book is probably as nearly abreast of the times as a book of its scope could be. However, under pellagra there is no mention of the use of nicotinic acid, although there is brief mention of the treatment by means of yeast and vitamin B.

Organic Chemistry. By Paul Karrer, Professor in the University of Zürich. Translated from the latest German edition by A. J. Mee, M.A., B.Sc., Head of the Science Department, Glasgow Academy, Glasgow. Cloth. Price, $11. Pp. 902. New York: Nordemann Publishing Company, Inc.; Amsterdam: "Elsevier," 1938.

This volume presents the subject in a concise manner, covering practical information of a broad scope and making readily available a commanding and recent survey by a noted chemist. It is based on the fifth German edition; corrections and additions of the sixth edition have been included. The changes in the recent editions not being great, the new advances are allotted space. Discussions of vitamins B_1 and E, the cortical steroids and organic compounds containing heavy hydrogen are included. Advanced students will find the text a reliable source of information. It supplies a sound groundwork, along with enough background for the consideration of various theories and topics. The book can be heartily recommended for every chemist's library.

Doctors, Nurses and Dickens. By Robert D. Neely. Cloth. Price, $1.50. Pp. 153, with 3 illustrations. Boston: Christopher Publishing House, 1939.

Here a Dickens enthusiast has assembled everything that the great master wrote concerning doctors, nurses and the medical profession. The volume is of interest and contains a vast amount of most quotable material.

Landmarks in Medicine: Laity Lectures of the New York Academy of Medicine. Introduction by James Alexander Miller, M.D., President, New York Academy of Medicine. Cloth. Price, $2. Pp. 347, with 15 illustrations. New York & London: D. Appleton-Century Company, Incorporated, 1939.

The New York Academy of Medicine has been conducting for some years a series of lectures for the public in the field of medical science. The present volume includes some excellent essays, mostly historical. The following items are included, in addition to the introduction by Dr. James Alexander Miller:

From Barber-Surgeons to Surgeons, by Francis R. Packard, M.D.
The Meaning of Medical Research, by Alfred E. Cohn, M.D.
Dr. Watson and Mr. Sherlock Holmes, by James J. Walsh, M.D.
The Search for Longevity, by Raymond Pearl, Ph.D.
Medicine and the Progress of Civilization, by Reginald Burbank.
X-Ray Within the Memory of Man, by Lewis Gregory Cole, M.D.

From the point of view of scientific information, the one most useful is the essay of Dr. Raymond Pearl.

Pechenochno-pochechnyi sindrom v chirurgii (hepato-nephrity): Eksperimentalnoklinicheskoye issledovanie. [By] Prof. A. Ya. Pytel. [Hepatorenal Syndrome in Surgery (Hepato-Nephritides): Experimental-Clinical Investigation.] Cloth. Pp. 157, with 11 illustrations. Stalingrad: Oblastnoe Knigoizdatelstvo, 1938.

Professor Pytel reports his clinical and experimental investigations dealing with the failure of the hepatic and the renal function in surgical diseases and in particular after operations on the liver and the biliary tract. The author was able to reproduce experimentally intraperitoneal autolysis of the liver tissue in dogs. Morphologic alterations in the liver and in the kidney were found to be analogous to those present in persons dying from liver disorders. The author concludes that loss of renal function in the so-called renal syndrome is due to damage to the glomeruli and the urinary canaliculi by toxic substances originating in the damaged liver or brought from the intestine to the liver which had lost its detoxifying function. The monograph presents an exhaustive discussion of the causes, the clinical manifestations and the prophylactic and active treatment of the hepatorenal syndrome. The monograph is written in Russian with a brief summary in French.

Sbornik trudov posvyashchenny XL-letiyu nauchnoy i uchebnoy deyatelnosti zasluzhennogo deyatelya nauki professora V. N. Shevkunenko. [Collection of Works Celebrating 40 Years of Scientific and Pedagogic Activity of V. N. Shevkunenko.] Cloth. Price, 12 rubles, 50 kopecks. Pp 306, with illustrations. Leningrad: Izdanie Voenno-Meditsinskoy Akademii RKKA im S. M. Kirova, 1937.

These two volumes constitute a festschrift dedicated by the faculty of the Military Academy of Leningrad to one of its most gifted sons, V. N. Shevkunenko, professor of operative surgery and topographic anatomy, on the occasion of his completion of forty years of clinical, pedagogic and experimental activity within the walls of the academy. Volume 1 contains papers dealing with studies on constitutional types, a subject to which Shevkunenko devoted much of his attention. Volume 2 contains papers dealing with various subjects in the field of operative surgery. The text reflects the standard of Soviet surgery and suggests that the traditions of the academy which not long ago could boast of such names as Sechenov, Pavlov, Pirogov and Fedorov are being perpetuated.

The Proceedings of the Charaka Club, Volume IX. Post Multa Virtus Opere Laxare Solet. Published for the Charaka Club. Boards. Price, $5. Pp. 204, with illustrations. New York: Richard R. Smith, 1938.

The ninth volume of the Proceedings of the Charaka Club contains some exceedingly interesting essays, poems and experiments in literature by the members of this erudite organization. The book has interest not only for the medical historian but for all persons who are interested in the literary and artistic portrayal of the medical scene. Especially fascinating is the opening essay by Dr. Harvey Cushing, which deals with Ercole Lelli. The book is beautifully printed in the same style as the previous volumes. The complete collection of the Proceedings of the Charaka Club is now a most valuable contribution to medical history.

Seventeenth Hospital Yearbook. 1939 Hospital Purchasing File: Directory of Products, Manufacturers' Catalogs, Purchasing Standards and Other Reference Data. Boards. Price, $2.50. Pp. 801. Chicago, Illinois: Modern Hospital Publishing Company, Inc., 1939.

The seventeenth edition of this yearbook, like its predecessors, is a compendium of information for purchasers. Practically everything used in building and operating a hospital is included. The material is helpfully indexed and classified. The last fifty pages present special articles on various classes of hospital apparatus, from air humidifiers to devices for refrigeration and insulation. There is a comprehensive check list for the purchase of hospital equipment and a list of national, state and sectional hospital and allied agencies.

Shok (Pratsi konferenstii z problemi shoku) Kiiv, 25-27 grudnya 1937 roku. [Shock. Transactions of Conference on Problems of Shock, Kiev, Dec. 25-27, 1937.] Paper. Price, 15 krb. Pp. 354, with illustrations. Kiev: Vidavnitstvo Akademii Nauk URSR, 1938.

This volume contains a number of papers dealing with the various aspects of clinical and experimental shock. Each contribution is accompanied by a summary in English or in French. There is a bibliographic supplement embracing most of the important literature on the subject written between 1931 and 1937. The experimental work is frequently of a high standard and as such should prove of interest to physiologists and clinicians.

Sbornik trudov posvyashchenny XXXV-letnemu yubileyu vrachebnoy, nauchnopedagogicheskoy i obshchestvennoy deyatelnosti zasluzhennogo deyatelya nauki Professora I. I. Faynshmidta. Redaktsionnoe byuro: V. P. Vorobev i A. I. Levin (otvetstvennye redaktory). Recueil de travaux consacré au XXXV anniversaire de l'activité médicale, scientifique, pédagogique et sociale du travailleur émérite de la science professeur I. I. Fainschmidt. Paper. Price, 14 rubles. Pp. 466, with illustrations. Kiev: Gosmedizdat USSR, 1937.

This is a festschrift issued by the Ukrainian Institute of Experimental Medicine and dedicated to I. I. Fainshmidt on the occasion of his completion of thirty-five years of clinical, peda-

gogic and communal activities. The papers deal with various clinical aspects of pneumonia, tuberculosis, cardiovascular disease and diabetes. Professor Fainshmidt, one of the most prominent internists of the Ukraine, has contributed much to these subjects. Each paper is accompanied by a brief summary in French.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Dead Bodies: Removal of Gold Crowns from Teeth as Mutilation of Body.—The defendant, an embalmer, was convicted of feloniously mutilating a dead body and appealed to the district court of appeal, second district, division 2, California.

Section 290 of the Penal Code of California provides that every person who "mutilates" a dead body of a human being without authority of law shall be guilty of a felony. It was for an alleged violation of this section that the defendant was arrested and subsequently convicted. The evidence was construed by the appellate court to show that the defendant removed two gold crowns from the teeth of a dead body. The trial court instructed the jury that the word "mutilate" as used in the Penal Code meant to destroy or remove a material part of so as to render imperfect. But, said the appellate court, in none of the dictionaries, either legal or general in scope, can there be found a definition of the word "mutilate" as applied to the human body which is couched in the language used by the trial court or in any similar language. Legal dictionaries, on the contrary, are in accord that the term "mutilate" means to cut off a limb or an essential part of the body or "to deprive a man of the use of those limbs which may be useful to him in fight." Without the use of dictionaries, the court pointed out, it would be difficult to conclude that one who removes gold crowns from the teeth of a dead body could be properly accused of mutilating the body. The evidence in the present case showed that the natural teeth of the dead body were not removed or impaired and that the only act committed was the removal of the crowns which had been cemented to the teeth. There was no maiming or disfigurement of the teeth or of any part of the body. It could not be successfully argued, the court continued, that a plate of false teeth, which is frequently removed for long periods of time, is in fact a part of the body. If two teeth should be removed from the jaw of a living person and two crowns should be fashioned by a dentist in such manner that they could be used and readily removed, it could not be seriously argued, the court thought, that the two false teeth would become a part of the body. The argument that the placing of cement in the false teeth to make them adhere to the natural teeth would result in the false teeth becoming a part of the human body seemed to the court equally unsound.

The appellate court, therefore, reversed the judgment of conviction.—*People v. Bullington (Calif.), 80 P. (2d) 1030.*

Hospitals: Liability for Injury to Pay Patient in County Hospital.—Twin Falls County, Idaho, erected and operated a county hospital in which pay patients were admitted. The plaintiff, a pay patient, was admitted to the hospital and an appendectomy was performed on her by her physician. After the operation, the physician prescribed an injection of physiologic solution of sodium chloride to be administered by a special nurse. A hospital employee gave the nurse a container containing a liquid similar in appearance to physiologic solution of sodium chloride but which actually contained boric acid. The special nurse injected the solution and injury to the plaintiff resulted. Thereafter the plaintiff sued the county to recover damages for her injuries. The trial court dismissed the suit and the plaintiff appealed to the Supreme Court of Idaho, which reversed the judgment of the trial court dismissing the plaintiff's suit. *Henderson* v. *Twin Falls County* (Idaho), 50 P. (2d) 597, 101 A. L. R. 1151; abstracted, J. A. M. A. **106**:1228 (April 4) 1936. The case was tried a second time and the trial court gave judgment for the plaintiff and the defendant county appealed to the Supreme Court of Idaho.

A physician who treated the plaintiff after her injury was called as a witness in her behalf and testified, on direct examination, as to the nature, character and probable lasting effect on her health of the injection of the solution of boric acid. He exhibited to the jury the scars on the plaintiff's leg caused by the injection of the solution. His direct examination was concluded late in the afternoon and the court was adjourned until the next morning. During the night the witness died. The following day, the defendant asked the court to declare a mistrial on the ground that it had, without fault on its part, been deprived of its right to cross-examine the witness. This motion was denied, whereupon the defendant moved that all the testimony of the witness be stricken from the record. The trial court granted this motion and very carefully instructed the jury not to consider any of the testimony. On appeal, the defendant insisted that the testimony of the physician was of such a nature that its rights could not be protected by striking the testimony and by instructing the jury that it be disregarded. It was the duty of the trial judge, said the Supreme Court, to listen carefully to the direct examination of the physician and to observe the attention given his testimony by the jurors and its apparent effect on their minds. After the physician died, and when the question was presented as to the effect of his direct examination on the jury, the trial judge knew, as well as any one could know, whether or not the defendant's rights would be protected by striking the testimony and by admonishing the jury to disregard it. The Supreme Court could see no reason to do otherwise than to place its stamp of approval on the action of the trial judge.

After reviewing all the assignments of error presented by the defendant, the Supreme Court was unable to discover anything that would warrant it in reversing the judgment for the plaintiff. The jury found, the court pointed out, from ample evidence that the plaintiff suffered grave injuries which were caused by the negligence of the defendant's agent while she was a pay patient in its hospital. The judgment of the trial court was therefore affirmed.—*Henderson v. Twin Falls County (Idaho), 80 P. (2d) 801.*

Society Proceedings

COMING MEETINGS

American Association for Thoracic Surgery, Los Angeles, July 5-7. Dr. Richard H. Meade Jr., 2116 Pine St., Philadelphia, Secretary.
American Association of Industrial Physicians and Surgeons, Cleveland, June 5-8. Dr. V. S. Cheney, Armour and Company, Union Stock Yards, Chicago, Secretary.
American Neurological Association, Atlantic City, N. J., June 5-7. Dr. Henry A. Riley, 117 East 72d St., New York, Secretary.
American Ophthalmological Society, Hot Springs, Va., June 5-7. Dr. Eugene M. Blake, 303 Whitney Ave., New Haven, Conn., Secretary.
American Orthopedic Association, Buffalo, N. Y., June 5-8. Dr. Ralph K. Ghormley, 110 Second Ave. S.W., Rochester, Minn., Secretary.
American Physiotherapy Association, Denver, June 25-30. Mrs. Eloise T. Landis, 2065 Adelbert Road, Cleveland, Secretary.
American Proctologic Society, Brooklyn, N. Y., June 25-27. Dr. Curtice Rosser, 710 Medical Arts Bldg., Dallas, Texas, Secretary.
Maine Medical Association, Poland Springs, June 25-27. Dr. F. R. Carter, 22 Arsenal St., Portland, Secretary.
Massachusetts Medical Society, Worcester, June 6-8. Dr. Alexander S. Begg, 8 Fenway, Boston, Secretary.
Medical Library Association, Newark, N. J., June 27-29. Miss Janet Doe, 2 East 103d St., New York, Secretary.
Montana, Medical Association of, Butte, June 28-30. Dr. Thomas L. Hawkins, 50 North Main St., Helena, Secretary.
National Tuberculosis Association, Boston, June 26-29. Dr. Charles J. Hatfield, 50 West 50th Street, New York, Secretary.
New Hampshire Medical Society, Manchester, June 8-9. Dr. Carleton R. Metcalf, 5 South State St., Concord, Secretary.
New Jersey, Medical Society of, Atlantic City, June 6-8. Dr. Alfred Stahl, 55 Lincoln Park, Newark, Secretary.
Pacific Coast Oto-Ophthalmological Society, San Francisco, June 19-22. Dr. C. Allen Dickey, 450 Sutter St., San Francisco, Secretary.
Pacific Northwest Medical Association, Spokane, Wash., June 26-29. Dr. C. W. Countryman, 407 Riverside Avenue, Spokane, Wash., Secretary.
Rhode Island Medical Society, Providence, June 7-8. Dr. Guy W. Wells, 124 Waterman St., Providence, Secretary.
Vancouver Medical Association Summer School, Vancouver, B. C., June 6-9. Dr. W. W. Simpson, 203 Medical Dental Bldg., Vancouver, B. C., Secretary.
West Virginia State Medical Association, White Sulphur Springs, July 10-12. Mr. Joe W. Savage, Public Library Bldg., Charleston, Executive Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1929 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

17: 259-386 (March) 1939

Earliest Known Reference to the Heart and Circulation: The Edwin Smith Surgical Papyrus, Circa 3,000 B. C. W. W. Hamburger, Chicago.—p. 259.

Prognosis of Bundle Branch Block. L. F. Bishop Jr. and G. A. Carden Jr., New York.—p. 275.

*Role of Treatment of Syphilis in Prevention of Cardiovascular Involvement. W. P. Thompson, Los Angeles; W. J. Comeau and P. D. White, Boston.—p. 286.

Effect of Certain Pure Digitalis-like Glucosides on the Frog's Heart. A. G. Macleod, New York.—p. 294.

Effect of Acetyl-Beta-Methylcholine on the Frog's Heart. A. E. Cohn and A. G. Macleod, New York.—p. 305.

*Treatment of Deep Thrombophlebitis and Chronic Leg Ulcers with Acetyl-Beta-Methylcholine Chloride Iontophoresis. R. A. Sokolov and M. P. Meyers, Detroit.—p. 316.

Papaverine Hydrochloride: Its Questionable Value as Vasodilating Agent for Use in Treatment of Peripheral Vascular Diseases. D. Littauer and I. S. Wright, New York.—p. 325.

Observations on Genesis of Renal Hypertension. L. N. Katz, M. Friedman, S. Rodbard and W. Weinstein, Chicago.—p. 334.

Supernormal Phase of Recovery in Man. D. Scherf, New York, and A. Schott, London, England.—p. 357.

Prevention of Cardiovascular Syphilis.—A statistical evaluation of the antisyphilitic therapy of 260 persons in relation to the later (fifteen to twenty-five years) development of cardiovascular syphilis is presented by Thompson and his associates. They attempt to supply more concrete information on the relationship of the amount of early antisyphilitic therapy to the incidence of cardiovascular involvement. Nineteen persons had cardiac disease of other than syphilitic etiology. Of the remaining 241 patients, eighteen (7 per cent) had definite cardiovascular syphilis and eight (3 per cent) had probable aortitis. In 190 subjects (80 per cent) the heart and aorta were normal, while twenty-five (10 per cent) had questionable dilatation of the aorta. These data agree with those of certain other observers with regard to the incidence of cardiovascular syphilis, for an incidence of 10 per cent (3 per cent probable aortitis and 7 per cent definite cardiovascular syphilis) was found. The grade of treatment showed little difference in the clinical groups except for persons with definite cardiovascular syphilis. All of these patients had inadequate early treatment and in all but one instance the late treatment was no better. The data, the authors state, give some support to their clinical impression that adequate treatment of syphilis tends to prevent the later clinical manifestations of cardiovascular syphilis.

Thrombophlebitis and Iontophoresis.—Acetyl-beta-methylcholine chloride iontophoresis was employed by Sokolov and Meyers in the treatment of nineteen cases of thrombophlebitis of the deep veins and thirteen cases of chronic leg ulcers of various origin. Some of the patients were from the outpatient department while others were private patients referred to the peripheral vascular department of the hospital. The majority of the patients were ambulatory. The shortest duration of the thrombophlebitis among the patients treated was eight days, the longest thirty-two years. Improvement was observed in eighteen of the nineteen cases. The majority of the patients were able to return to full-time work, some at hard manual labor. Others were only partially rehabilitated. In one patient pain and disability, which had been present for thirty years, disappeared completely. Many of the patients had had various other forms of treatment over a period of years without relief. The most definite improvement took place in instances in which the disease was of short duration. When the disease had been present for a number of years, improvement was slow and less dramatic. Improvement may not manifest itself until several treatments have been given. It is not unusual, especially in the cases of old chronic phlebitis, to see no alteration in the disease process until a considerable period has elapsed and then suddenly to observe beneficial changes taking place. In fresh postoperative cases the results were at times quite dramatic. One precaution which was observed in treating open lesions of the skin by iontophoresis was that the ulcerated area itself was covered with a thin piece of rubber sheeting. If this is neglected the current is likely to concentrate at the point of ulceration, which may cause pain and further destruction of tissue. Of the thirteen cases of chronic leg ulcers, twelve lesions had healed completely and the thirteenth lesion was healing rapidly when last observed.

American Journal of Cancer, New York

35: 327-490 (March) 1939

Structure, Nature and Classification of the Cerebellar Astrocytomas. P. C. Bucy and W. A. Gustafson, Chicago.—p. 327.

Comparison of Effect of a Homologous Tumor Material and the Duran-Reynals Factor on Tumor Growth. A. E. Casey, St. Louis.—p. 354.

Production of Transplantable Carcinoma and Sarcoma in Guinea Pigs by Injections of Thorotrast. L. Foulds, London, England.—p. 363.

Sarcoma 37 and the Virus Problem. W. H. Woglom, New York.—p. 374.

Influence of Roentgen Radiation on Immunity to Shope Fibroma Virus. J. Clemmesen, Leeds, England.—p. 378.

Further Studies with Seedlings on the Question of Wavelength Dependence of Radiobiologic Reactions. P. S. Henshaw and D. S. Francis, New York.—p. 386.

Effect of Oil of Wintergreen on Spontaneous Tumors of the Mammary Gland in Mice: VII. Liquefaction of Spontaneous Tumors of Mammary Gland in Mice by Heptyl Aldehyde. L. C. Strong, New Haven, Conn.—p. 401.

Contorted Mitosis and Superficial Plasmagel Layer. W. H. Lewis, Baltimore.—p. 408.

*Rhabdomyosarcoma of Diaphragm: Case Report. T. M. Peery, Washington, D. C., and W. A. Smith, Charleston, S. C.—p. 416.

Experimental Production of Adenoma of the Pituitary. Isabella H. Perry and Margot Szabo Lockhead, San Francisco.—p. 422.

Carcinogens and Planarian Tissue Regeneration. S. E. Owen, H. A. Weiss and L. H. Prince, Hines, Ill.—p. 424.

Rhabdomyosarcoma of Diaphragm.—Peery and Smith report a case of malignant tumor of the diaphragm (rhabdomyosarcoma) in a Negro boy 14 years of age. The observations at necropsy are discussed. The tumor appeared to metastasize entirely by the lymphatic route. This is apparently the tenth case of primary tumor of the diaphragm on record, the sixth case of malignant tumor primary in the diaphragm, and the second case in which the parent tissue was voluntary muscle. Most of the previously reported cases occurred in women in the fourth decade of life. The present patient is apparently one of the youngest patients on record.

American Journal of Physiology, Baltimore

125: 415-624 (March) 1939. Partial Index

Nature of the Factor Which Is Concerned in Loss of Blood Coagulability of Bile Fistula and Jaundiced Rats. J. D. Greaves, St. Louis.—p. 423.

Studies on Vitamin K Requirements of the Rat. J. D. Greaves, St. Louis.—p. 429.

Influence of Posture on Skin and Subcutaneous Temperatures. H. S. Mayerson and L. A. Toth, New Orleans.—p. 474.

Influence of Posture on Circulation Time. H. S. Mayerson, H. M. Sweeney and L. A. Toth, New Orleans.—p. 481.

Gonadotropic Extracts from Green Leaves. M. H. Friedman and Gertrude S. Friedman, Philadelphia.—p. 486.

Examination of the Hypnotoxin Theory of Sleep. J. G. Schnedorf and A. C. Ivy, Chicago.—p. 491.

Homeostasis in the Sympathectomized Dog. Florence Knauf McDonough, Boston.—p. 530.

Uterine Motility Cycle in the Guinea Pig. K. A. Greig, Rochester, N. Y.—p. 547.

Inadequacy of Substances of the "Glucose Cycle" for Maintenance of Normal Cortical Potentials During Hypoglycemia Produced by Hepatectomy with Abdominal Evisceration. S. Maddock, J. E. Hawkins Jr. and E. Holmes, Boston.—p. 551.

Relationship of the Hyperglycemic Principle in Diabetic Urine to the Pancreas and the Hypophysis. H. L. Clay and H. Lawson, Louisville, Ky.—p. 566.

Cerebral Metabolism and Electrical Activity During Insulin Hypoglycemia in Man. H. E. Himwich, Z. Hadidian, J. F. Fazekas and H. Hoagland, Albany, N. Y.—p. 578.

Respiratory Metabolism of Infant Brain. H. E. Himwich, Zelma Baker and J. F. Fazekas, Albany, N. Y.—p. 601.

Splenic Volume and the Polycythemia of Artificial Fever in Intact, Unanesthetized Dogs. L. L. Palitz, Chicago.—p. 607.

American Journal of Public Health, New York

29: 197-304 (March) 1939

*Diphtheria Immunization with Fluid Toxoid and Alum Precipitated Toxoid: Preliminary Report. V. K. Volk and W. E. Bunney, Saginaw, Mich., with technical assistance of Anita Leavitt, Ann Sonderman and Louise Hagaman.—p. 197.
Asbestosis. R. R. Sayers and W. C. Dreessen, Washington, D. C.—p. 205.
Factors Influencing Nonspecific Resistance to Infection. C. F. Church, Philadelphia.—p. 215.
Production of Antipneumococcus Rabbit Serum. B. S. Fritz, Marietta, Pa.—p. 224.
Rural Field Experience for Public Health Nursing Students. Pearl McIver, Washington, D. C.—p. 231.
Place of Methylene Blue and Resazurin Reduction Tests in a Milk Control Program. C. K. Johns, Ottawa, Ont.—p. 239.
Experience of the Victorian Order of Nurses for Canada with Cases of Pregnancy as Reflected by Case Records. J. T. Phair, A. H. Sellers and Mary Ferguson, Toronto.—p. 248.
A Health Department Birth Control Program. R. Norton, Raleigh, N. C.—p. 253.
Late Lactose Fermenting Organisms of the Coli-Aerogenes Group. N. R. Ziegler, Columbia, Mo.—p. 257.
Slow Lactose Fermenters in Water Analysis. M. McCrady, Montreal.—p. 261.
Id. Anna Dean Dulaney and E. F. Smith, Memphis, Tenn.—p. 266.

Diphtheria Immunization.—Volk and Bunney compare the immunization value of one dose of alum precipitated toxoid and two doses of fluid toxoid at four months, one year and two years after injection; and a comparison of two doses of alum precipitated toxoid and three doses of fluid toxoid at four months after injection. Most of the children (7,347 from 119 schools) were from rural communities in Saginaw County, Mich. The immunity response was followed by blood titrations only. The authors concern themselves solely with the antitoxin response to different immunizing procedures. They do not attempt to prove that any one procedure is the procedure of choice for routine immunization against diphtheria. The fact that no abscesses or severe reactions have followed the two injections of alum precipitated toxoid augurs well for the future of this method of immunization. In the increasing order of the response that the several diphtheria immunization procedures induce, the authors state that they are, under the conditions of their study, one dose of fluid toxoid, two doses of fluid toxoid at intervals of three weeks, one dose of alum precipitated toxoid, three doses of fluid toxoid at intervals of three weeks and two doses of alum precipitated toxoid at intervals of three weeks.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

41: 305-492 (March) 1939. Partial Index

Use of Roentgen Rays in Obstetrics: Part I. Roentgen Pelvimetry and Cephalometry; Technic of Pelvioroentgenography. W. E. Caldwell, H. C. Moloy and P. C. Swenson, New York.—p. 305.
Petrositis: Roentgenologic and Pathologic Correlation. E. P. Fowler Jr. and P. C. Swenson, New York.—p. 317.
Observations on Process of Ossification in Formation of Persistent Enlarged Parietal Foramina. E. P. Pendergrass and O. H. P. Pepper, Philadelphia.—p. 343.
*Roentgenologic and Gastroscopic Studies in Chronic Gastritis and Peptic Ulcer. F. E. Templeton and R. Schindler, Chicago.—p. 354.
Complications Produced by Malignant Tumors of the Nasopharynx. C. L. Martin, Dallas, Texas.—p. 377.
Analysis of End Results Following Experimental Radiation Therapy of Gastric Cancer: Report of 268 Cases. G. T. Pack and G. McNeer, New York.—p. 391.
*Treatment of Acute Pneumonias with Roentgen Rays. E. V. Powell, Temple, Texas.—p. 404.
Striking Regression of Generalized Subcutaneous and Visceral Metastases of Malignant Melanoma (Melanoblastoma) Following Intensive High Voltage Roentgen Irradiation of the Pituitary Gland. P. E. Wigby and M. H. Metz, Dallas, Texas.—p. 415.
Cancer of Esophagus: Some Etiologic Considerations. W. L. Watson, New York.—p. 420.
Results of Roentgen Therapy in Fifty-One Cases of Primary Inoperable Cancer of Ovaries. E. A. May, East Orange, N. J.—p. 425.
Low Voltage Roentgen Therapy in Skin Cancer: Study on Relationship of Dosage to Size of Field. W. S. MacComb, New York.—p. 437.

Gastritis and Ulcer.—From their x-ray and gastroscopic study of peptic ulcer and chronic gastritis, Templeton and Schindler conclude that chronic gastritis, diagnosed easily through the gastroscope, can rarely be diagnosed with certainty by present x-ray methods. This is particularly true of the superficial and atrophic forms. Usually gastric ulcer can be diagnosed equally well by the two methods but occasionally an ulcer may be seen by one method and not by the other. It follows that the two methods should be used together when possible. When an ulcer is located so that the gastroscopist can see it, gastroscopy is the method of choice for following the course of healing under treatment. However, the course of healing can also be followed roentgenologically. Gastroscopic evidence of gastritis is not present in all cases of gastric or duodenal ulcer. The antral narrowing sometimes accompanying gastric ulcer presents gastroscopic evidence of gastritis. Inflammatory changes in the deeper layers of the wall of the stomach may give x-ray evidence of gastritis but no gastroscopic evidence.

Treatment of Acute Pneumonias with Roentgen Rays.—Powell has employed roentgen therapy in 105 cases of lobar pneumonia and in thirty cases of bronchopneumonia. Five of the patients with lobar pneumonia and four of those with bronchopneumonia died, giving a mortality of less than 5 per cent for the former and 13 per cent for the latter. Specific immune serum has been used on only three patients, two of whom died. The technic is to give from 250 to 350 roentgens, using 135 kilovolts, 3 mm. of aluminum filter and a skin target distance of 40 cm. As soon as the diagnosis is made, treatment is given anteriorly or posteriorly over an area a little larger than the involved portion of the lung. A definite leukopenia such as is found in some postinfluenzal pneumonias is the only contraindication to roentgen treatment. If the temperature has not returned to normal or below within thirty-six hours after the first roentgen treatment, a second treatment of 200 roentgens is given over the opposite cutaneous area. When roentgen treatment is given before consolidation is complete it may spread, but the patient shows the usual clinical improvement, and the temperature, pulse, respiration and leukocyte count return to normal. A few cases with mixed infection have required a third or fourth treatment, successively smaller doses of course being given. In mixed infections recovery by lysis is more apt to occur after an initial drop from the high temperature to a moderate elevation above the normal. Bronchopneumonia seems more variable in its response to radiation therapy. The author's patients have been treated in all stages of the disease, from the first to, in one case, the eleventh day. Most of the patients show relief of distress and general symptomatic improvement within a few hours and more than one third of them, he states, have shown a drop in temperature to normal or below within thirty-six hours after the treatment. The temperature of a number of patients has returned to normal in less than twelve hours after treatment. The author uses digitalis only when there is definite cardiac decompensation. He uses oxygen when there is cyanosis or when the respiratory rate is high enough to be exhausting to the patient. Metrazol is used as a respiratory and peripheral circulatory stimulant. Morphine or dilaudid as indicated is given for pain. High fever is usually controlled by ice caps and cold colon flushes. The author believes that, even if the mortality had not been reduced so much, the use of roentgen therapy in these cases would be justified by the relief of anxiety and discomfort experienced by the patients.

Annals of Internal Medicine, Lancaster, Pa.

12: 1403-1554 (March) 1939

Diabetic Coma (Investigation of Mortalities and Report of Severity Index for Comparative Studies). I. M. Rabinowitch, A. F. Fowler and E. H. Bensley, Montreal.—p. 1403.
Clinical Significance of Punctate Basophilia in Erythrocyte. E. H. Falconer, San Francisco.—p. 1429.
The Challenge of Appendicitis. R. Fitz, Boston.—p. 1442.
*Development and Importance of Hypertension in Chronic Bright's Disease. H. O. Mosenthal and H. H. Lander, New York.—p. 1449.
*Liver Function in Rheumatoid (Chronic Infectious) Arthritis. W. B. Rawls, S. Weiss and Vera L. Collins, New York.—p. 1455.
Serum Proteins in Rheumatoid Disease. C. W. Scull, T. F. Bach and R. Pemberton, Philadelphia.—p. 1463.
*Factors Influencing Incidence and Course of Otitis Media in Scarlet Fever. C. Wesselhoeft, Boston.—p. 1473.
Nongranulomatous Chronic Enteritis. D. Adlersberg and M. Weingarten, New York.—p. 1486.
Thrombo-Angiitis Obliterans Associated with Diabetes Mellitus. S. Helm and B. T. Horton, Rochester, Minn.—p. 1493.
Some Limitations in Preventive Medicine. H. A. Christian, Boston.—p. 1499.

Hypertension in Bright's Disease.—Mosenthal and Lander point out that the elevation of blood pressure characteristic of chronic Bright's disease is usually believed to occur in two ways: without any renal involvement (primary or essential hypertension) or as the result of renal insufficiency (secondary

hypertension). However, the development of increased arterial tension before impairment of renal function is present occurs commonly in cases of chronic diffuse glomerular nephritis, the initial, dominant, often sole sign of which is albuminuria. The study of 124 cases shows that 36 per cent of the patients had a normal blood pressure, 19 per cent had an elevation of blood pressure associated with marked renal insufficiency and 45 per cent had hypertension with little or no renal insufficiency. This shows chronic diffuse glomerular nephritis the initial symptom of which is albuminuria as being albuminuria first, hypertension next and, finally, renal insufficiency. Hypertension of marked degree may manifest itself in chronic Bright's disease characterized at the onset only by albuminuria, even in the absence of or coexistence of no more than a slight degree of impairment of renal function. The hypertension occurring in patients with albuminuria often is the cause of death. The most common sequence of events when albuminuria exists that the authors have observed was the evidence of hypertension followed by signs of renal insufficiency and, if the patient survived the effects of the increased arterial tension for a sufficient period, the impairment of renal function would become more marked and retention uremia then was the cause of death. There were some cases of albuminuria that over a period of years (36 per cent) did not give evidence of either hypertension or impairment of renal function. The authors do not believe that a high protein diet is a cause of hypertension. Hypertension may be brought about by a latent renal insufficiency which is not shown by the usual clinical tests, since the latter indicate a diminution of renal function only when 50 per cent or more of the renal tissue becomes inactive, or the progressive involvement of the kidneys incident to the nephritis may, through autolysis, produce a pressor substance akin to the "renin."

Hepatic Function in Arthritis.—In a previous study Rawls and his colleagues found that 73 per cent of 100 patients with rheumatoid arthritis gave evidence of hepatic dysfunction, as determined by the azorubin S hepatic function test. Being aware that no single test gives an indication of all the functions of the liver, these observations prompted them to continue this study, using other tests for comparison. The results obtained in fifty unselected cases showed that a high proportion of patients with rheumatoid arthritis had evidence of hepatic damage as determined by the azorubin S, hippuric acid and bilirubin excretion tests. The icterus index, galactose tolerance and albumin-globulin ratio were considered unsatisfactory. The hippuric acid test and the albumin-globulin ratio gave the highest proportion (62 per cent) of abnormalities. When the azorubin S test showed abnormalities, so did one or more of the other tests. Because of this agreement and because it agreed more closely with the clinical evidence, the azorubin S test was considered most suitable for detecting chronic hepatic damage. Technical errors and lack of specificity in the different tests make it desirable that more than one test be used.

Incidence of Otitis Media in Scarlet Fever.—In a review of reliable sources from the literature, Wesselhoeft accumulated 371,778 cases of scarlet fever in which the average incidence of suppurative otitis media is 12 per cent. In a study of 10,000 cases on his own service, the incidence was also 12 per cent. Within the last few years an incidence of about 12 per cent has been reported from Stockholm, Rome, Boston and Los Angeles. Thus climate, which plays an important part in the morbidity of scarlet fever, appears to exert no influence on the incidence of involvement of the middle ear. The age of the patient exerts a definite influence on the frequency of this complication, its incidence being about 40 per cent in the first years of life. Otitis media is more frequent in winter than in summer. Diphtheria and measles when associated with scarlet fever augment the frequency of otitis media. Isolation lowers the incidence. While a previous tonsillectomy reduces the likelihood of scarlet fever, the absence of tonsils cannot be shown to lower the incidence of otitis media. Paracentesis does not materially reduce the incidence of surgical mastoiditis. Early treatment with serum appears to have a favorable effect on the incidence of otitis media. The administration of concentrated cod liver oil to patients with scarlet fever does not appear to lower the incidence materially. While the administration of sulfanilamide appears to be of distinct value in the event of septicemia, further hospital investigations are necessary before this drug should be recommended as a routine prophylactic measure for the aural complications of scarlet fever.

Annals of Otol., Rhinol. and Laryngology, St. Louis

48: 1-288 (March) 1939. Partial Index

What Is Perception Deafness from a Physiologic and Histologic Basis? M. H. Lurie, Boston.—p. 3.
Sulfanilamide in Otolaryngology: Some Personal Experiences. R. A. Fenton, Portland, Ore.—p. 17.
*Nicotinic Acid and the Eighth Nerve: Preliminary Report. G. Selfridge, San Francisco.—p. 39.
Allergy in Otolaryngology and Its Relation to Other Manifestations: I. General Considerations. F. K. Hansel, St. Louis.—p. 54.
Nonsurgical Treatment of Diseases of Nose and Pharynx. G. D. Hoople, Syracuse, N. Y.—p. 73.
Dermatologic Conditions of Ear, Nose and Throat. F. A. Figi, Rochester, Minn.—p. 81.
Operation for Possible Alleviation of Certain Cases of Congenital Deafness and Certain Types of Acquired Chronic Deafness. E. C. Padgett, Kansas City, Mo.—p. 113.
Late Ear Hemorrhage Following Skull Fractures. W. E. Grove, Milwaukee—p. 120.
Periesophageal Abscesses: Importance of Early Surgical Interference. W. M. Hunt, New York.—p. 128.
Pertinent Facts Relating to Chronic Pansinusitis. W. Mithoefer, Cincinnati.—p. 158.
Some Preliminary Experiments in Study of Cigaret Smoke and Its Effects on Respiratory Tract. A. Proetz, St. Louis.—p. 176.
Malignant Tumors of Nasopharynx and Paranasal Sinuses. N. S. Weinberger, Sayre, Pa.—p. 203.

Nicotinic Acid and the Eighth Nerve.—Selfridge has used nicotinic acid, nicotinamide and quite recently sodium nicotinate in the treatment of some thirty cases of high tone deafness. The ages of the patients ranged from 21 to 77 years. In many the results are striking; in all cases in which the audiogram shows a gradual decline of the tone scale, use of these fractions is justified; for, while the improvement in the audiometric curve may not be great, the physical and mental improvement is sufficient justification. Indeed, any measures tending to ward off senescence are justifiable, and evidence is slowly accumulating that several components of the vitamin B complex play a definite part in the advancing of age.

Archives of Otolaryngology, Chicago

29: 403-604 (March) 1939

*Studies of Pupils of the Pennsylvania School for the Deaf: I. Auditory Acuity. W. Hughson, Abington, Pa.; A. Ciocco, Baltimore, and C. Palmer, Washington, D. C.—p. 403.
Acute Osteomyelitis of the Superior Maxilla in Children: Report of Case. N. E. Lacy and L. P. Engel, Kansas City, Mo.—p. 417.
Penetration of Inner Ear by Mercurochrome. E. L. Ross and J. W. Hamilton, Chicago.—p. 428.
Primary Melanoma of Nasal Cavity: Report of Two Cases. A. T. Smith, Philadelphia.—p. 437.
Pneumopericardium and Pneumomediastinum in Cases of Acute Obstructive Laryngitis. H. Graebner, New York.—p. 446.
Tumors of Nose and Throat. G. B. New, Rochester, Minn., and W. Kirch, Des Moines, Iowa.—p. 457.
Petrositis: Report of Case with Review of Some of the Literature. C. E. Towson, Philadelphia.—p. 468.
Role of Tonsils in Experimental Endocarditis. I. Frank and Margery Blahd, Chicago.—p. 480.
Petrous Apex of Temporal Bone and Its Relations. W. J. Mellinger, Santa Barbara, Calif.—p. 484.
Study in Presbycusis: Auditory Loss with Increasing Age and Its Effect on Perception of Music and Speech. N. H. Kelley, Louisville, Ky.—p. 506.
History of Audiometry. D. Macfarlan, Philadelphia.—p. 514.
Deviation of the Septum in Relation to the Twisted Nose. S. Salinger, Chicago.—p. 520.
Anatomy and Physiology of Ear. J. R. Richardson, E. M. Holmes and W. Mueller, Boston.—p. 560.

Auditory Acuity in a School for the Deaf.—According to Hughson and his associates, complete lack of response to auditory stimulation is a rare condition, as 95 per cent of the 460 children studied at the Pennsylvania School for the Deaf responded to at least one tonal frequency by air conduction in one ear and 85 per cent in both ears. In the majority of these children the loss of hearing is bilateral and approximately equal in the two ears. Sex is not a significant factor. Since age is not related to the degree of loss, the type of deafness dealt with does not seem to be progressive. Fifty-four per cent of the children were said to be born deaf. The percentage of children who presumably became deaf after birth is highest at 1 year of age and decreases rapidly at each consecutive year. No difference

in acuity of hearing could be found between the children who were born deaf and those with acquired deafness. The deafness developing after birth has been attributed to numerous pathologic conditions, among which meningitis is the most frequent. This disease was stated to be the cause for deafness in 17 per cent of the children. Meningitis together with trauma of the head, measles, otitis media or scarlet fever was given as the cause of deafness for almost one half of the children. A significant number of the children examined were found to have enough residual hearing either by air or by bone conduction to warrant some rational effort toward therapeutic relief.

Archives of Pathology, Chicago

27: 399-660 (March) 1939

Mechanism of Localization of Vegetations of Bacterial Endocarditis. A. C. Allen, New York.—p. 399.

Studies of Human Ova: I. Description of Artificially Induced Parthenogenetic Activities in One. S. P. Reimann and B. J. Miller, Philadelphia.—p. 412.

Rare Localizations of Hydatid Disease in Turkey: Report of Case of Plurivisceral Echinococcosis. P. Çambel, Istanbul, Turkey.—p. 419.

Experimental Endocarditis in Dogs. Margery Blahd, I. Frank and O. Saphir, Chicago.—p. 424.

Pathologic Changes in Rats and in Dogs Fed Diets Containing Lead and Arsenic Compounds: Compounds Used: Lead Arsenate, Arsenic Trioxide, Calcium Arsenate and Lead Acetate. Lucy L. Finner and H. O. Calvery, Washington, D. C.—p. 433.

*Pathologic Effects of Certain Glycols and Related Compounds. H. D. Kesten, M. G. Mulinos and L. Pomerantz, New York.—p. 447.

Cartilaginous Foci in Hearts of White Rats and of Mice. W. C. Hueper, New York.—p. 466.

Spirochetes in Gastric Glands of Macacus Rhesus and of Man Without Related Disease. J. L. Doenges, St. Louis.—p. 469.

Pulmonary Epithelium and Proliferative Reactions in Lungs: Study of Cellular Response in Lungs After Intratracheal Injection of Toxic and Nontoxic Foreign Substances. I. S. Ross, Durham, N. C.—p. 478.

Experimental Muscular Dystrophy in the Guinea Pig: Nutritional Myodegeneration. H. Chor and R. E. Dolkart, Chicago.—p. 497.

Effects of Organismal Differentials on Distribution of Leukocytes in Circulating Blood. H. T. Blumenthal, St. Louis.—p. 510.

*Appendicitis: I. Changes in Musculature of Appendix in Chronic Appendicitis. J. Goldner, New York.—p. 546.

Reticulo-Endotheliomatosis. D. Symmers and W. Hutcheson, New York.—p. 562.

Hemangio-Endothelial Sarcoma of Thyroid with Extension into Trachea and with Massive Hemoptysis. M. A. Simon, Montreal.—p. 571.

Elastic Tissue. G. M. Hass, Boston.—p. 583.

Pathologic Effects of Certain Glycols.—In studying the changes that occur in rats, rabbits and guinea pigs to which ethylene glycol (glycol), diethylene glycol (diglycol), propylene glycol and some of their derivatives had been administered Kesten and his associates found that (1) ethylene glycol and ethylene glycol diacetate may cause deposition of oxalates in the kidneys and mild renal insufficiency, (2) propylene glycol is relatively harmless, especially when given by mouth, large intravenous doses being necessary to cause hemoglobinuria and casts, and (3) diethylene glycol, the methyl, ethyl and butyl ethers of diethylene glycol, dioxane and dipropylene glycol are all capable of causing profound degeneration of renal epithelium leading to uremia. The molecules of diglycol and its ethers, of dipropylene glycol and of dioxane contain an ether linkage between two glycol molecules. Dioxane possesses two such linkages, which may in part account for its relatively high toxicity. The molecules of ethylene glycol, ethylene glycol diacetate and propylene glycol lack this particular type of ether linkage. The ether linkage between two glycol molecules may be responsible for the hydropic degeneration of the epithelium of the convoluted tubules and of the hepatic cords. The main feature of the compounds causing hydropic degeneration of the kidney is the extensive character of the damage wrought. In each experiment one or more of the animals was apparently unaffected by the drug, but in the injured animals the lesions were usually maximal. The animals that received diglycol and its ethers, dioxane and dipropylene glycol died usually as a result of the damage to the convoluted tubules, in uremia. Appreciable amounts of the several chemicals must be given to produce demonstrable changes in the animals. In no instance was less than 1 cc. per kilogram of body weight effective.

Changes in Musculature in Chronic Appendicitis.—Goldner states that in chronically inflamed appendixes there are morphologic deviations of the two muscular layers, with attenuation or thickening, disappearance and the production of supplementary fibers. Aberrant fibers appear ectopically, forming median coats, surrounding lymph follicles or lying in the fibrous capsule of the submucosa. These structural changes are frequently seen in chronic appendicitis, fairly often in the subacute inflammation that signalizes early chronic appendicitis and rarely in acute appendicitis and in normal appendixes. Their presence denotes past attacks that have stimulated the production of capillaries and histiocytes. They exist even when other cardinal signs have subsided. Functional changes in the form of abnormal contraction should correspond to these structural abnormalities of the musculature, which would in part explain the pathogenic mechanism of appendicitis. Abnormal contraction may be as important etiologically as changes in the rigid connective tissue framework, which also shows lesions of past attacks. Aberrant fibers have a special histogenesis. Preformed or newly formed capillaries disappear. Although the majority of aberrant muscular structures appear to be permanent, others may fall prey to sarcolysis or to rearrangement. The lytic forces involved are supplied by histiocytes.

Archives of Physical Therapy, Chicago

20: 129-192 (March) 1939

Relative Roles of Extremities in Body Heat Dissipation—Normal Circulation and Peripheral Vascular Disease. C. Sheard, Grace M. Roth and B. T. Horton, Rochester, Minn.—p. 133.

Ultraviolet Radiation in Gastrointestinal Tuberculosis. J. S. Coulter and L. L. Hardt, Chicago.—p. 143.

Wassermann-Fast Syphilis, with Special Reference to Pyretotherapy. J. K. Howles, New Orleans.—p. 149.

Reestablishment of Circulation in Extremities. W. B. Kountz, St. Louis.—p. 157.

Diagnostic Procedures for Peripheral Vascular Disturbances. P. Merrell, Indianapolis.—p. 162.

Paraffin Bath in Peripheral Vascular Disease. S. H. Sedwitz, Youngstown, Ohio.—p. 165.

Certain Biologic Effects During Artificial Fever. M. Pijoan, Boston.—p. 170.

Archives of Surgery, Chicago

38: 599-796 (April) 1939

Cause of Death Resulting from Massive Infusions of Isotonic Solutions: Experimental Study. R. A. Cutting, P. S. Larson and A. M. Lands, Washington, D. C.—p. 599.

*Operative Treatment for Benign Rectal Stricture (Lymphogranuloma Venereum): Preliminary Report. H. J. Warthen, Richmond, Va.—p. 617.

Occurrence, Distribution and Pathogenesis of So-Called Liver Death and/or the Hepatorenal Syndrome. A. O. Wilensky, New York.—p. 625.

Effects of Hemorrhage and of Transfusion on Blood Flow in an Extremity. N. W. Roome, London, Ont.—p. 692.

Total Pneumonectomy. M. Behrend and A. Behrend, Philadelphia.—p. 698.

Retroperitoneal Lymph Nodes: Their Importance in Cases of Malignant Tumors. A. U. Desjardins, Rochester, Minn.—p. 714.

*Acute Segmental Appendicitis: Experimental and Clinical Studies. J. Felsen and B. Lewis, New York.—p. 755.

Incarcerated Meckel's Diverticulum in Femoral Hernia. E. L. Strohl and S. W. McArthur, Chicago.—p. 783.

Role of the Respiratory Tract in Contamination of Air: Comparative Study. D. Hart and H. M. Schiebel, Durham, N. C.—p. 788.

Operation for Venereal Lymphogranuloma.—In order that local measures of treatment may be carried out without danger of peritonitis Warthen devised an operation, which he has performed successfully on ten patients with proved venereal lymphogranuloma. The procedure, in brief, is obliteration of the culdesac by chemical irritation and suturing, followed by a double-barreled colostomy. The patients have recovered and have been benefited by the procedure. In one of the early cases a small ventral hernia developed at the site of the colostomy. In the later cases greater care has been taken in suturing the aponeurosis of the external oblique muscle through the defect in the mesosigmoid and no hernia has occurred. The closure of the culdesac has permitted dilation of the stricture without danger of peritonitis, and the diversion of the fecal current has resulted in relaxation of the strictures. If necessary, further operative procedures on the stricture may be carried out through the rectum with relative safety. The author states that this is a preliminary report, for operation in the earliest case was done only eighteen months ago, and none of the colostomy openings have been closed.

Acute Segmental Appendicitis.—From experimental studies on rabbits and twenty cases of human segmental appendicitis (proximal, central and distal types) Felsen and Lewis find from an anatomicopathologic standpoint that there are two obvious

points of similarity between segmental appendicitis in the rabbit and in man. First, the vascular supply in both is of the terminal type. Second, the clearly defined segmental lesions produced by vascular ligation in the rabbit resemble both grossly and microscopically those observed in man. The possible point of divergence lies in the pathogenesis, in whether all segmental lesions in the human appendix are due to vascular occlusion. The authors attempt to reconcile the many divergent opinions on the subject of appendicitis with their hypothesis that acute segmental appendicitis in man is due to vascular occlusion. After discussing the many theories, they conclude by stating in defense of their hypothesis that, whether the blood vessels are affected by systemic toxins or by bacteria from a distant focus or whether they are obstructed secondarily by distention of the lumen, by angulation or by foreign bodies, the theory of vascular occlusion as the cause of segmental appendicitis seems plausible. They believe that the applicability of their theory to the pathogenesis of appendicitis in general is also suggested by the data that they cite.

California and Western Medicine, San Francisco

50: 169-248 (March) 1939

Tuberculous Appendicitis. T. A. Card, Riverside.—p. 176.
Traumatic Diaphragmatic Hernia: Transpleural Repair. H. E. Schiffbauer, Los Angeles.—p. 180.
Vitamin Deficiency States: Their Recognition and Treatment. D. L. Wilbur, San Francisco.—p. 184.
Roentgen Diagnosis of Diseases of Ileocecal Region of Gastrointestinal Tract. J. Jellen, Los Angeles.—p. 188.
Selective Anesthetic Program: Its Desirability. H. G. Holder, San Diego.—p. 190.
Nucleus Pulposus Rupture: Legal-Industrial Aspects. E. D. Leonard, San Francisco.—p. 194.
Active Interstitial Keratitis of Late Prenatal Syphilis: Its Treatment. C. R. Anderson and W. A. Wilson, Los Angeles.—p. 196.

Canadian Public Health Journal, Toronto

30: 119-170 (March) 1939. Partial Index

Tuberculosis in Industry. A. R. Riddell, Toronto.—p. 156.
*Detection of Two Typhoid Carriers. J. Wyllie, Kingston, Ont.—p. 161.

Detection of Two Typhoid Carriers.—The histories of two typhoid carriers are cited which Wyllie believes illustrate the missed type of carrier and the development of the carrier condition following a clinical attack of the disease. In the first case, the history suggests that the patient was the source of infection for her husband and two sons at different intervals. Conclusive evidence that she infected her youngest son is furnished by Craigie's bacteriophage tests, which show that the strains of Bacillus typhosus isolated from the mother and the son are identical and belong to the same group. The need for reexamination at intervals of three, six, nine and twelve months following the illness is shown by the second carrier. The patient, an institutional inmate, had typhoid in April 1936 and a month later another case developed. Both patients were investigated and suspicion fell on the first case as directly responsible for the second. The organisms isolated from both cases proved identical by bacteriophage tests, being type C strains. The serologic results of blood samples from the first of these two cases, which were examined frequently, suggested a possible carrier condition and this was confirmed by fecal isolation of the specific organism a year following the illness.

Florida Medical Association Journal, Jacksonville

25: 421-476 (March) 1939

Sterility. C. D. Hoffmann, Orlando.—p. 435.
Lupus Erythematosus. L. M. Sompayrac, Jacksonville.—p. 440.
Common Fractures About the Wrist. E. L. Jewett, Orlando.—p. 444.
Alum in Treatment of Acute Hemorrhage. J. A. Mease Jr., Dunedin.—p. 450.

Georgia Medical Association Journal, Atlanta

28: 77-144 (March) 1939. Partial Index

Sketch of Early Atlanta Medicine. F. K. Boland, Atlanta.—p. 81.
Notable Investments in Atlanta for Medical Education and Hospitals. J. L. Campbell, Atlanta.—p. 88.
Doctors of the Past Who Have Contributed to the Making of Atlanta Medicine of the Present. J. C. Weaver, Atlanta.—p. 94.
Transitory Bundle Branch Block and Nodal Rhythm: Report of Case. J. C. Massee, Atlanta.—p. 105.
Traumatic Hemothorax Treated by Artificial Pneumothorax and Autotransfusion: Report of Case. B. P. Wolff, Atlanta.—p. 108.

Illinois Medical Journal, Chicago

75: 189-284 (March) 1939

Application of New Knowledge of Nerve Physiology to Clinical Medicine. E. F. Pearson, Springfield.—p. 227.
*Progressive Myopia (New Treatment with Base-In Prisms). W. M. Thompson and O. B. Nugent, Chicago.—p. 231.
How the County Medical Society Can Aid the Legislative Committee. J. R. Neal, Springfield.—p. 234.
Diagnostic and Prognostic Value of the Erythrocyte Sedimentation Rate in General Practice. J. B. Stokes, Pontiac.—p. 236.
Rationalization of Preoperative and Postoperative Treatment of Abdominal Surgical Conditions. G. S. Van Alstyne, Chicago.—p. 243.
Undulant Fever: Major Public Health Problem. W. R. Roberts and E. L. Roberts, Cissna Park.—p. 247.
The Hypertensive Heart. O. P. J. Falk, St. Louis.—p. 252.
The Patient and the Weather. F. LeBlanc, Chicago.—p. 254.
Rocky Mountain Spotted Fever in Illinois: Report of Two Cases. B. Q. Dysart, Henry.—p. 258.
The Evanston Social Hygiene Clinic. W. H. Tucker, R. A. Allen, J. D. Croft and N. G. Shaw, Evanston.—p. 260.
*Benzedrine Sulfate in Severe Depressions. I. Finkelman, Chicago, and D. Haffron, Elgin.—p. 264.
Improvements in Surgical Treatment of Gallbladder Disease. R. B. Bettman and W. H. Tannenbaum, Chicago.—p. 266.
Standpoint of the Reserve. G. de Tarnowsky, Chicago.—p. 269.
If War Should Come, What Role Would the Medical Profession Play? N. L. Sheehe, Rockford.—p. 270.
The Medical Profession in War. L. Applequist, Aurora.—p. 272.
Mumps Complicated by Acute Meningo-Encephalitis. H. R. Fishback and G. B. Fauley, Chicago.—p. 273.
One Hundred Cases of Malaria. P. V. Dilts, Pittsfield.—p. 275.
Vomiting in Children. E. Prilla, Chicago.—p. 277.
Vitamin B_1 in Relation to Visual Reception. E. Poser, Chicago.—p. 280.

Progressive Myopia.—Thompson and Nugent believe that they have developed a treatment for progressive myopia which practically covers every phase of the etiology involved. They have found it extremely successful in all cases of axial progressive myopia; less so in the more complicated types, but worth trying in all. The first step in the treatment is the making of the prescription for glasses. The total error is ascertained. Then from 20 to 25 per cent of the sphere is removed, and the prism is found by adding prisms base in until diplopia is produced. Now the prism is neutralized until monocular vision is accomplished. The remaining prism is used base in, half over each eye. The next step is to place the lenses as near to the patient's eyes as is possible without their touching the cilia. This is for the scientific reason that, the longer the focal distance, the larger the object appears to a myopic eye, and therefore the less the strain on it. The third step consists of special exercises with the myoculator. The patient is seated 4 feet from the machine, wearing the proper prescription and three diopters of prism base in over each eye in addition. The eyes should be exercised for ten minutes, three times a week. The time may be increased, slowly, to twenty minutes. The fourth step is a request for special class work, special large type in the books read and the scientific use of good lighting, either natural or artificial. All use of the eyes for close work must be carefully supervised and a time limit used. The fifth step is the compilation of a diet list which will give the patient a properly balanced vitamin intake. The last step is called "medication" and consists of cod liver oil and iron, quinine and strychnine for rebuilding the muscle power involved. The authors conclude that, whatever else may be used in the treatment of myopia of any type, the eyes should be prevented from converging, and for this they advise base in prisms.

Amphetamine Sulfate in Severe Depressions.—Finkelman and Haffron used amphetamine (benzedrine) sulfate in the treatment of fifteen patients; five were classified as in the depressed phase of manic-depressive psychosis and seven as having involutional psychoses, one was a mixed type of manic-depressive psychosis and two were severely depressed but their behavior did not fit any of the nosologic entities. The duration of the treatment varied between three weeks and three months. The amphetamine sulfate was administered in the early part of the day, in divided doses, the dosage ranging from 20 to 60 mg., administered in the form of 10 mg. tablets. One patient (involutional psychosis) improved markedly after amphetamine was administered for three weeks. The other fourteen patients showed no favorable response. During the administration of the drug, however, two of the patients recovered two and three months, respectively, after treatment was discontinued. These were cases

of manic-depressive psychosis. Three patients were definitely affected adversely by the treatment. Another depressed patient became restless and irritable and acquired a suicidal tendency which ceased after the medication was discontinued. In a third patient the treatment was discontinued because the patient became combative. Amphetamine sulfate is a useful drug and is of value in postencephalitic parkinsonism, narcolepsy, mild depressed states and chronic exhaustion, but it is of no value and may be harmful in severe depressions.

Indiana State Medical Assn. Journal, Indianapolis

32: 101-164 (March) 1939

Hearing Defects. R. S. Chappell, Indianapolis.—p. 101.
Speech and Hearing Defects. C. H. McCaskey, Indianapolis.—p. 103.
Id. W. H. Gardner, Bloomington.—p. 105.
Deaf—But No Longer Dumb. Josephine B. Timberlake, Washington, D. C.—p. 108.
Maladjustments in School Children. Gladys D. Frith, South Bend.—p. 110.
Emotional Problems in Childhood. Sponsored by the Indiana Pediatric Society.—p. 112.
Ménière's Disease: Its Diagnosis and Treatment. W. E. Dandy, Baltimore.—p. 117.
Newer Concepts in the Interpretation of Anemias. L. L. Blum, Terre Haute.—p. 120.
Fever of Unknown Origin: Report of Case. M. B. Welborn, Evansville.—p. 122.
A Medical Plan for All the People. C. F. Vohs, St. Louis.—p. 125.
Diagnosis and Management of Cholecystitis. R. D. McClure, Detroit.—p. 129.

Iowa State Medical Society Journal, Des Moines

29: 143-184 (April) 1939

Fractures of the Hip. A. F. O'Donoghue, Sioux City.—p. 152.
Undulant Fever Treated with Sulfanilamide: Case. A. E. Livingston, H. D. Gray and H. G. Decker, Des Moines.—p. 156.
Ovarian Tumors in Childhood: Report of Thirty-Two Pound Cyst in Girl Twelve Years of Age. O. H. Miller, Estherville.—p. 157.

Johns Hopkins Hospital Bulletin, Baltimore

64: 155-212 (March) 1939

Treatment of Adrenal Insufficiency by Means of Subcutaneous Implants of Pellets of Desoxycorticosterone Acetate (Synthetic Adrenal Cortical Hormone). G. W. Thorn, L. L. Engel and H. Eisenberg, Baltimore.—p. 155.
Graded Pneumonectomy in Treatment of Tumors of the Lung. W. F. Rienhoff Jr., Baltimore.—p. 167.
*Studies on Hypersensitivity to Catgut as Factor in Wound Disruption. K. L. Pickrell, Baltimore.—p. 195.

Hypersensitivity to Catgut and Wound Disruption.—Pickrell states that only three cases of disruption of surgical incisions sutured with catgut have occurred at the Johns Hopkins Hospital during the last two years. Approximately 4,000 incisions have been closed with catgut during this time. Each of these patients was tested for local sensitivity immediately following disruption by intradermal injection on the volar surface of the forearm of 0.1 cc. of catgut extract, with a physiologic solution of sodium chloride control, and in addition with 0.1 cc. of Kraissl's plain and chromic extracts. Similar quantities of extract diluted 1 to 10 were injected intracutaneously in the opposite arm. The tests, performed immediately after disruption, were negative. Furthermore, negative results were obtained on 100 patients tested preoperatively and postoperatively in a similar manner at daily intervals for several days. The same patients were again tested from three to four weeks after operation, when the greater part of the catgut is probably absorbed, and the tests were negative. It has been stated (Kraissl) that "it is possible to sensitize guinea pigs to catgut and to produce disruptions of laparotomies with this material." It has been impossible for the author in his experiments to sensitize either guinea pigs or rabbits to commercial catgut or to an extract from catgut. Wounds did not disrupt in rabbits or guinea pigs which had been previously treated with catgut when proper aseptic precautions were observed. Although catgut implanted intradermally in rabbits and guinea pigs caused an inflammatory response, the leukocytic emigration was no greater than in those animals which had been previously treated with catgut or catgut extract. Therefore the author concludes that although catgut, like any other suture material, acts as a foreign body and causes a slight leukocytic response it does not act as an antigen inducing a hypersensitive state.

Journal of Bacteriology, Baltimore

37: 245-354 (March) 1939. Partial Index

Relation of Aerobiosis to Fermentation of Mannitol by Staphylococci. Eugenia Valentine Colwell, New York.—p. 245.
*Effects of Sulfanilamide on Brucella Melitensis, Variety Melitensis, Abortus and Suis. E. E. Menefee Jr. and Mary A. Poston, Durham, N. C.—p. 269.
Factors Limiting Bacterial Growth: IV. Age of Parent Culture and Rate of Growth of Transplants of Escherichia Coli. A. D. Hershey, St. Louis.—p. 285.
Study of Lipids of Certain Enteric Bacilli. Clara H. Williams, W. R. Bloor and L. A. Sandholzer, Rochester, N. Y.—p. 301.
Cultural and Antigenic Properties of Shigella Sonnei. J. H. Glynn and D. H. Starkey, Montreal.—p. 315.
Absorption of Bacteriophage by Sensitized Enterococci. E. J. Tiffany and M. L. Rakieten, Brooklyn.—p. 333.

Effects of Sulfanilamide on Brucellosis.—Menefee and Poston studied the in vitro action of sulfanilamide and related compounds on Brucella organisms, the in vitro action of sulfanilamide and antibrucella serum and the action of sulfanilamide on experimental brucellosis in the guinea pig. The results of the three varieties of Brucella (melitensis, abortus and suis) organisms show no essential differences after thirty-six hours of incubation between the cultures with sulfanilamide and the controls. After thirty-six hours, however, the bacteriostatic effect of the sulfanilamide was definitely apparent. The results are similar to those obtained by Long, who showed the in vitro bacteriostatic effects of sulfanilamide on streptococci and other organisms. The work of Francis, who was able to sterilize cultures of a strain of Brucella abortus by the addition of small amounts of sulfanilamide, was not confirmed by the authors. They state that the good results obtained by him may have been due to the small inoculum used in his experiments. Of the related compounds tested only one (p,p' diaminodiphenyl sulfoxide) had a greater in vitro bacteriostatic action than sulfanilamide on Brucella melitensis. The bacteriostatic effect of serum and sulfanilamide on Brucella melitensis was less efficient than sulfanilamide alone. For studying the effect of sulfanilamide on experimental brucellosis forty healthy guinea pigs were injected intraperitoneally with 1,000,000,000 organisms of a culture of Brucella melitensis recently isolated from the blood of an acutely ill patient. Five days after injection one half of the animals were given sulfanilamide for ten days, receiving daily 60 mg. per kilogram of weight. The dose was then halved and continued for ten more days. Thirty-five days after inoculation all the animals were killed and carefully examined, and cultures of their spleens were made on liver infusion agar. Agglutinins and opsonocytophagic powers were present in all the guinea pigs, but at the end of the experimental period the average agglutinin titer of the treated group had fallen and the opsonocytophagic reaction had increased. The agglutinin titer of the untreated group remained high till the end of the experiment, and the opsonocytophagic reactions were only moderately strong. Brucella was isolated from nineteen of the twenty untreated guinea pigs and from only one of the treated animals. No marked serologic reaction developed in this guinea pig. The authors believe that their experimental observations support the clinical ones in suggesting that the bacteriostatic action allows the normal defense mechanisms of the body to cope adequately with the invading bacteria.

Journal Industrial Hygiene & Toxicology, Baltimore

21: 109-154 (April) 1939

Shattering of Dust Particles by the Impinger. D. G. Beadle, Johannesburg, South Africa.—p. 109.
Note on Shattering of Dust Particles in the Impinger. H. H. Watson, Wiltshire, England.—p. 121.
Lobar Pneumonia in Anthracite Miners: Mortality and Complication Statistics. A. C. Cohen and R. Charr, Philadelphia.—p. 124.
*Acute Ethylene Dichloride Poisoning. Z. T. Wirtschafter and E. D. Schwartz, Cleveland.—p. 126.
Urinary Sulfate Test in Supervision of Workers Exposed to Benzene. C. M. Jephcott and F. M. R. Bulmer, Toronto.—p. 132.
Ten Years' Experience with Industrial Hygiene in Connection with Manufacture of Viscose Rayon. H. L. Barthelemy, Rome, Ga.—p. 141.

Acute Ethylene Dichloride Poisoning.—Wirtschafter and Schwartz report three cases of industrial poisoning resulting from exposure to ethylene chloride vapor. The men were employed in a knitting factory and they were poisoned while cleaning a shipment of yarn. They had not had any previous

exposure to ethylene dichloride. Four hours after the exposure began, the men became dizzy, were nauseated and vomited profusely. They complained of weakness and trembling. The men were removed from exposure immediately after the onset of nausea and were hospitalized one hour later, since their vomiting continued unabated. A severe dermatitis of the hands occurred as the result of direct contact with the liquid. Hepatic damage was evident by the presence of extremely low blood sugar levels. Leukocytosis occurred in each case. No evidence of renal damage was observed. Because of its relaxing effect on smooth muscle, 10 per cent calcium gluconate solution was administered intravenously to each patient on admission to the hospital. Prompt relief of the epigastric cramps occurred. Vomiting also subsided, so that the men were able to take fruit juices within a few hours. Fluid was therefore not administered parenterally. The tremors disappeared shortly after admission. The following day the administration of a high calcium, high carbohydrate diet was instituted. Occasional nausea persisted for several days. Bland ointments were applied to the hands and the severe dermatitis improved slowly over a period of weeks. The patients were discharged one week after admission, with the advice that the high carbohydrate diet be continued for some time. At the time of discharge the men felt entirely well except for the condition of their hands. The clinical symptoms in these cases were similar to those produced by the other chlorinated hydrocarbons when inhaled in fairly high concentration. The absence of unconsciousness was undoubtedly due to the fact that exposure was terminated before sufficient vapor had been inhaled.

Journal of Pediatrics, St. Louis

14: 277-416 (March) 1939

*Clinical Experience with Sulfapyridine: Report of Thirty-Three Cases. W. A. MacColl, Durham, N. C.—p. 277.
*Oils as Substitutes for Butter Fat in Infant Feeding. G. Frontali, Padua, Italy.—p. 290.
Midsummer Respiratory Infection in an Aseptically Conducted Adoption Nursery. L. W. Sauer and J. J. McDonald, Evanston, Ill.—p. 304.
Treatment of Infectional Asthma in Children with Filtrates of Cultures of Upper Respiratory Pathogenic Bacteria. F. A. Stevens, New York.—p. 307.
Differential Diagnosis of Nonrheumatic "Growing Pains" and Subacute Rheumatic Fever. M. J. Shapiro, Minneapolis.—p. 315.
Epidemic Encephalitis Type B in Children: Clinical Observations in the 1937 Outbreak. P. J. Zentay and J. Basman, St. Louis.—p. 323.
Hemorrhagic Disease of the Newborn: Critical Consideration. S. H. Clifford, Boston.—p. 333.
Bacterium Alkalescens in Stools of Normal Infants. M. L. Snyder, Ann Arbor, Mich.—p. 341.
Phenylketonuria and the Congenitally Deaf. J. W. Larcomb, Columbus, Ohio.—p. 348.
Cooley's Anemia (Mediterranean Anemia): Report of Case in an Adolescent. E. J. Thalheimer, A. Mezzetti and J. Gershon-Cohen, Vineland, N. J.—p. 349.
Tularemia in Siblings. W. W. Waddell Jr. and W. S. Wray, University, Va.—p. 358.
Acute Polyneuritis of Uncertain Origin (Guillain-Barré Syndrome). J. B. Gillespie and Elsie H. Field, Urbana, Ill.—p. 363.
Tuberculous Atelectatic Bronchiectasis. R. Wilson, Vancouver, B. C.—p. 368.
Tryptophan Bodies in Tuberculous Meningitis. J. A. Toomey, R. P. Fulton and F. W. Rea, Cleveland.—p. 372.
Renal Calcification in Infancy and Childhood. W. A. D. Anderson, Memphis, Tenn.—p. 375.

Sulfapyridine.—MacColl used sulfapyridine in the treatment of thirteen cases of various types of pneumonia, nine of bronchopneumonia, three of osteomyelitis, three of meningitis, two of ruptured appendix and one each of cellulitis of the hand and shoulder, impetigo neonatorum and epidermolysis bullosa. The most effective use of the drug appeared to be in pneumococcic infections. Improvement was observed within forty-eight hours. The total leukocyte count seemed to be the best indicator of progress, since a delay in resolution and spread of the process appeared to occur when the count remained high. This suggests that specific antiserum may be of value when the patient's antibody response is slow. In bronchopneumonia the drug was of benefit when other treatment failed. The infections treated were caused by beta hemolytic streptococci and hemolytic Stapylococcus aureus. The miscellaneous group of conditions treated suggests that the drug may have wider applications and deserves further study. Toxic effects such as vomiting, cyanosis, methemoglobin formation and a fall in hemoglobin during treatment indicate that the same caution must be employed as when sulfanilamide is used. Sulfapyridine is effective in smaller doses and in lower concentrations than sulfanilamide. In almost all cases the administration of the drug has been accompanied by a lowering of the temperature. This has been so constant that an antipyretic effect is suggested.

Oils as Substitutes for Butter Fat.—Frontali studied the absorption of various fats in pathologic conditions in infants in whom the utilization of butter fat is usually poor, as in celiac disease. From his studies and those of his collaborators, both clinical and experimental, in both normal infants and in those who have a diminished tolerance for fats, he is led to conclude that an oil-flour food or dry oil-milk in which olive oil is substituted for butter permits an efficient utilization of fats (96.26 per cent), which approaches that of pure triolein (97.77 per cent), is well tolerated and leads to a regular and continuous increase in weight, while a similar food in which butter is used instead of olive oil, other circumstances being equal, gives inferior results. In the preparation of the food, sufficient quantities of butter can remain after the centrifugation of the milk or the vitamins A and D can be added in measured quantities to the oil-flour food or to the dry oil-milk.

Journal of Pharmacology & Exper. Therap., Baltimore

65: 227-342 (March) 1939

Action of Pentamethylenetetrazol (Metrazol) on the Circulatory System. V. G. Haury and C. M. Gruber, Philadelphia.—p. 227.
Respiratory Inhibitory and Paralytic Effects of Some Barbital Hypnotics and Coal-Tar Analgesics. A. J. Lehman, Oklahoma City.—p. 235.
Comparison of Effect of Calcium and of Atropine and Scopolamine on Plasma Loss and on General Symptoms of Guanidine Intoxication. A. S. Minot, Nashville, Tenn.—p. 243.
Study of Mechanisms Involved in Loss of Plasma in Guanidine Intoxication and in Prevention of Such Loss by Atropine and by Calcium. A. S. Minot, Nashville, Tenn.—p. 253.
Influence of Digoxin on Potassium Content of Heart Muscle. A. M. Wedd, Rochester, N. Y.—p. 268.
Experimental Convulsions in the Rat. W. L. Sampson and L. Fernandez, Rahway, N. J.—p. 275.
Pharmacologic Action of Deuterium Oxide: VII. Its Effect on Hydrolysis of Acetylcholine. H. G. Barbour and Virginia C. Dickerson, New Haven, Conn.—p. 281.
Studies on Prevention of Liver Cirrhosis by Subcutaneous Injections of Xanthine Containing Preparations. J. C. Forbes, Richmond, Va.—p. 287.
Studies of Carbazole Derivatives: I. Aminocarbazoles. N. B. Eddy, Ann Arbor, Mich.—p. 294.
Id.: II. Amino Alcohols and Derivatives of Tetrahydrocarbazole. N. B. Eddy, Ann Arbor, Mich.—p. 308.
Action of Magnesium on Central Nervous System and Its Antagonism by Calcium. G. W. Bryant, G. Lehmann and P. K. Knoefel, Louisville.—p. 318.
Observations on Potassium Fibrillation. L. H. Nahum and H. E. Hoff, New Haven, Conn.—p. 322.
*Morphine as Metabolic Stimulant. H. G. Barbour, Janet A. Porter and Joyce M. Seelye, New Haven, Conn.—p. 332.

Morphine as Metabolic Stimulant.—Barbour and his colleagues confirm the calorigenic action of morphine, deduced by Barbour, Gregg and Hunter, from reduction in metabolic rate on withdrawal of dogs from the drug. The degree of stimulation appears unrelated to the presence or extent of chronic morphinism. During the first month of this condition the metabolic peaks averaged 16 per cent, and during the second to fifth months 19 per cent. The average resting metabolism for the entire twenty-four hours, by sampling at different times, can be estimated at 10 per cent above normal in the second to fifth months of morphinism. The peak of stimulation appears sooner after the daily injection as tolerance to the quieting effect of morphine develops. Morphine, independently of neuromuscular activity, exerts marked influence as a metabolic stimulant.

Kansas Medical Society Journal, Topeka

40: 89-132 (March) 1939

Some Surgical Principles in Treatment of Injuries and Infections of the Hand. S. L. Koch, Chicago.—p. 89.
Radiation Therapy in Treatment of Infections: Collective Study. L. G. Allen and P. E. Hiebert, Kansas City.—p. 95.
Acid Therapy for Juvenile Pyelitis. F. C. Neff, Kansas City.—p. 101.
Adult and Congenital Pyloric Stenosis. C. E. Partridge, Emporia.—p. 103.
Relation of Bacterial Allergy to Other Allergic Conditions. A. J. Brier, Topeka.—p. 106.

Medical Annals of District of Columbia, Washington

8: 65-96 (March) 1939

Shock Therapy (Insulin and Metrazol) in Neuroses. H. D. Shapiro and W. Freeman, Washington.—p. 65.
Congenital Cystic Disease of the Lung. G. Tolstoi and O. B. Hunter, Washington.—p. 73.
Automobile Accidents and Emergency Surgery. D. L. Borden and D. H. Stubbs, Washington.—p. 79.
Management of Third Stage of Labor. A. E. King, Washington.—p. 83.
Diphtheritic Infection Following Tonsillectomy: Report of Case. A. P. Tibbets, Washington.—p. 86.

Michigan State Medical Society Journal, Lansing

38: 185-272 (March) 1939

Solitary Cyst of Spleen: Report of Case. F. T. Andrews, Kalamazoo, and R. S. Harter, Schoolcraft.—p. 201.
Glomus Tumor: Report of Four Cases. M. P. Meyers, Detroit.—p. 204.
*Mare Serum Hormone in Treatment of Certain Endocrine Dysfunctions in Women: Clinical Study. R. B. Kennedy and C. F. Shelton, Detroit.—p. 209.
Gallstone Colic or Gastric Crisis: Case Report. B. H. Larsson, Detroit.—p. 212.
Adenoma of Stomach. L. M. Hilt, Grand Rapids.—p. 213.
Removal of BB Shot with Giant Magnet. C. C. McClelland, Detroit.—p. 216.
Cesarean Section, 338 Consecutive Cases. W. F. Seeley, Detroit.—p. 217.
Improved Needle for Intravenous Therapy. Constantine L. A. Odén, Muskegon.—p. 221.
One Year of Occupational Disease Reporting in Michigan. D. W. Gudakunst, K. E. Markuson and J. M. Hepler, Lansing.—p. 222.

Mare Serum in Endocrine Dysfunctions of Women.—Kennedy and Shelton treated ten cases of amenorrhea and three cases of menorrhagia with pregnant mare serum hormone intramuscularly. No gross pathologic changes in the pelvis were found in any of these women. The work of Davis and Koff, in which they produced ovulation in the human female, was accomplished with the intravenous use of the hormone. Before administration the patients were carefully tested for protein hypersensitivity. The results, particularly in some of the amenorrheas, were sufficiently hopeful to justify mention. Pregnant mare serum exhibits certain definite physiologic differences from preparations of urinary gonadotropic substance. The physiologic studies on animals and human beings indicate that this hormone possesses gonadotropic properties closely resembling those of the anterior pituitary gland. In proper dosage many workers have shown that it is capable of stimulating normal ovarian function. The action in general is similar to that of the various gonadotropic substances. Urinary gonadotropic substances act differently in the human being than they do in laboratory animals and therefore do not fulfil the original hopes entertained for them as a true pituitary type of gonadotropic hormone. The new mare serum hormone seems to fulfil the desired requirement of an anterior pituitary-like gonadotropic substance.

Military Surgeon, Washington, D. C.

84: 289-404 (April) 1939. Partial Index

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Is America Physically Fit to Go to War? G. W. Calver.—p. 299.
Specific Somatic Polysaccharide as the Essential Immunizing Antigen of Typhoid Bacillus. F. B. Wakeman.—p. 318.
Rehabilitation of the Chronically Disabled, with Special Reference to Use of Physical Measures. F. H. Krusen.—p. 339.
Modern Treatment and Management of Coronary Thrombosis. A. E. Parsonnet.—p. 346.
Cardiac Arrhythmias. B. A. Moxness.—p. 362.
Fistulas, Sinuses and Pseudosinuses in Anal Region. N. D. Smith.—p. 377.

New England Journal of Medicine, Boston

220: 407-458 (March 9) 1939

*Clinical Effect of Colloidal Aluminum Hydroxide on Patients with Peptic Ulcer. R. B. Rutherford and E. S. Emery Jr., Boston.—p. 407.
Painless Acute Infarction of the Heart. A. M. Babey, Brooklyn.—p. 410.
New Method of Strapping for Back Strain with Sciatica. F. W. Ilfeld, Boston.—p. 412.
Clinical Pathology (Laboratory Medicine). W. T. Salter, Boston.—p. 436.

Colloidal Aluminum Hydroxide for Peptic Ulcer.—Rutherford and Emery treated twenty-eight cases of severe peptic ulcer with colloidal aluminum hydroxide. This was given orally or by continuous drip and orally for from three to nine months. The gastric contents were completely neutralized. Relief of pain occurred within twenty-four hours. The drug and the method of treatment were agreeable to the majority of patients. The drug apparently did not alter the body chemistry. This type of treatment is advantageous in patients who do not respond to the usual medical treatment because of a hypersecretion or night secretion, in those in whom peptic ulcer is complicated by nephrolithiasis and in patients in whom alkalosis develops while they are receiving alkaline powders.

220: 459-494 (March 16) 1939

X-Ray Treatment of Cancer in Small Communities. F. W. O'Brien, Boston.—p. 459.
Physical Therapy in Arthritis. F. H. Krusen, Rochester, Minn.—p. 463.
Radiation Therapy in Treatment of Inflammatory Lesions. F. O. Coe, Washington, D. C.—p. 471.
Surgery of the Sympathetic Nervous System. R. H. Smithwick, Boston.—p. 475.

New York State Journal of Medicine, New York

39: 489-658 (March 15) 1939

Multiple Areas of Intracerebral Calcification. C. A. McKendree, S. B. Wortis and S. E. Soltz, New York.—p. 495.
Panhysterectomy: Study Based on 2,773 Consecutive Hysterectomies. E. P. McDonald, Albany.—p. 503.
Dosage Specifications in X-Ray Therapy. Edith H. Quimby, New York.—p. 509.
Gallbladder Disease: Optimal Time for Operation. H. L. Prince, Rochester.—p. 516.
Pigment Cirrhosis: Rate of Occurrence and Difficulties in Diagnosis. J. R. Lisa and J. F. Hart, New York.—p. 521.
Clinical Comparative Study of Anesthetics in 1,370 Cases of Thoracic Surgery: Cyclopropane, Evipal, Avertin, Gas-Oxygen, Regional and Local. P. N. Coryllos and Sara Bass, New York.—p. 525.
Prevention of Maternal Deaths. C. A. Gordon, Brooklyn.—p. 535.
Treatment of Lobar Pneumonia with Sulfapyridine. W. L. Whittemore, C. L. Royster and P. A. Riedel, New York.—p. 540.

Northwest Medicine, Seattle

38: 77-112 (March) 1939

*Picrotoxin: Its Pharmacology and Clinical Use in Barbiturate Poisoning. J. M. Dille, Seattle.—p. 80.
Prontylin and Prontosil: Their Use in Infectious Complications of Pregnancy. R. E. Watkins and R. C. Blatchford, Portland, Ore.—p. 83.
Common Injuries Involving the Knee Joint. L. H. Edmunds, Seattle.—p. 85.
Varicose Veins of the Lower Extremities. M. A. Howard, Portland, Ore.—p. 91.
Sacral Foramina Finder: Simplifying Sacral Block Anesthesia. G. R. Marshall, Seattle.—p. 94.
Bottle in Gut: Report of Case. J. O. Rude, Petersburg, Alaska.—p. 96.
Lenticular Metabolism in Relation to Cataract. C. A. Veasey Jr., Spokane, Wash.—p. 97.
Congenital Syphilis. M. L. Bridgeman, Portland, Ore.—p. 99.

Picrotoxin.—Dille summarizes the fifteen cases of barbiturate poisoning treated with picrotoxin that have appeared in the literature. A considerable number of barbiturates and a wide range of doses were involved. Thus far there have been no extensive clinical studies of the use of picrotoxin as an analeptic for depressants other than barbiturates. It may be of value in the treatment of poisoning from chloral hydrate and paraldehyde. There is definite evidence that picrotoxin is definitely dangerous in morphine poisoning. Therefore, before using picrotoxin it is important to know the depressant responsible for the coma. The most conclusive evidence of whether the barbiturates are responsible is their presence in the blood, urine or stomach washings of the patient. A simple test available for this purpose is one devised by Koppanyi and his associates. Picrotoxin is generally regarded as a dangerous drug. Its dose is from 0.5 to 2 mg. and it has a narrow margin of safety when used alone. However, pharmacologic experiments and clinical evidence indicate that in the case of barbiturate poisoning much higher doses may be used. It must, however, be administered by divided doses of from 3 to 10 mg. and the total amount administered should depend on the response of the patient. At all times an overdose of the picrotoxin should be avoided, for an attack of convulsions is followed by greater depression. Picrotoxin has been usually administered intravenously during the first part of the treatment at intervals of from twenty minutes to an hour until an increase in respiration and a rise in blood pressure occurs or until slight twitches appear in the facial muscles. Picrotoxin is detoxicated by the body quite rapidly and in order to be effective the amount in the body must be maintained. As the treatment progresses the drug may be administered intramuscularly. Other measures, such as gastric lavage, other stimulants, oxygen and parenteral fluids, should be carried out.

Ohio State Medical Journal, Columbus

35: 357-480 (April) 1939

Diabetes. H. J. John, Cleveland.—p. 373.
A Simpler Method of Internal Fixation of Fractures of the Hip. D. M. Stewart, Toledo.—p. 380.
Shock Therapy in the Neuroses. J. Sagebiel, Dayton.—p. 385.
Serum Disease, with Special Reference to Polyneuritis. J. J. Coons and G. D. Kirk, Columbus.—p. 390.
Isolation of Infectious Diseases and Aseptic Examination Procedures. M. M. Miller, Akron.—p. 393.
*Picrotoxin in Treatment of Barbiturate Intoxication: Report of Case. J. T. Stephens and J. P. Anderson, Cleveland.—p. 396.
Rheumatic Heart Disease. R. A. Lewis, Dayton.—p. 398.
Management of Case of Pollen Hay Fever With or Without Associated Asthma. J. Forman, Columbus.—p. 401.

Picrotoxin for Barbiturate Intoxication.—A case of barbiturate intoxication in a woman 20 years of age is reported by Stephens and Anderson. The patient took 72 grains (4.7 Gm.) of sodium amytal. This was evidently absorbed, since no emesis occurred. The patient was comatose and displayed signs of marked anoxemia, with cyanosis, reduced respirations and clonic convulsions. After the administration of 156 mg. of picrotoxin over a period of twenty-four hours, together with large quantities of fluid intravenously, the patient regained consciousness and recovered rapidly. Within a few days she was entirely well. This instance furnishes additional evidence of the clinical efficacy of picrotoxin in counteracting barbiturate intoxication. This drug is not employed as a substitute for symptomatic and supportive measures but is used as an active adjuvant to these procedures.

Oklahoma State Medical Assn. Journal, McAlester

32: 83-112 (March) 1939

Adrenal Cortex in Surgery. L. C. Northrup, Tulsa.—p. 83.
Complications of Gonorrhea. A. R. Russell, McAlester.—p. 84.
Diagnosis and Treatment of Gallbladder Disease. J. H. Veazey, Ardmore.—p. 88.
Think of It First: Some Comments on the Diagnosis of Tuberculosis. R. M. Burke, Sulphur.—p. 91.
Further Study of Lobar Pneumonia in the Tulsa Area. S. Goodman, Tulsa.—p. 93.
Functional Hearing Test. C. A. Pavy, Tulsa.—p. 97.

Pennsylvania Medical Journal, Harrisburg

42: 593-720 (March) 1939

Recent Advances in Surgical Treatment of Pulmonary Tuberculosis. R. H. Overholt, Boston.—p. 605.
Pathology, Symptoms and Diagnosis of Pulmonary Tuberculosis. J. L. Wilson, New Orleans.—p. 613.
Treatment of Pulmonary Tuberculosis (in Brief). F. W. Burge, Philadelphia.—p. 617.
Attitude of the States to the Pennsylvania Tuberculosis Plan. C. H. Holmes, Atlanta, Ga.—p. 621.
Modern Anesthesia. E. W. Beach, Philadelphia.—p. 623.
The Undescended Testicle: Modification of the Torek Technic. G. V. Foster, Pittsburgh.—p. 627.
The Dental Problem of the Child. E. R. Sausser, Philadelphia.—p. 632.
Endocrine Therapy: Available Preparations and Their Clinical Application. S. A. Savitz and A. Lichtin, Philadelphia.—p. 636.
Modification of the Lagrange Operation for Simple Glaucoma: Results of Operation in Fifty Unselected Cases. J. M. Griscom, Philadelphia.—p. 640.
Role of Physical Therapy in Treatment of Anterior Poliomyelitis. G. Wagoner, Haverford.—p. 643.

Philippine Islands Med. Association Journal, Manila

19: 1-66 (Jan.) 1939

*Studies on Vitamin C: III. Vitamin C Content of Milk and Vegetable Extracts Available for Young Infants. I. Concepcion, with technical assistance of Maria Luisa Gargaritano, Manila.—p. 1.
Normal Growth of Filipino School Children. M. C. Icasiano and F. Z. Cruz, Manila.—p. 7.
Acute Pneumoperitoneum Simulating Acute Intestinal Obstruction: Report of Case. J. Eduque, A. T. Zavalla and B. Pañgilinan, Manila.—p. 17.
Metabolism of Calcium and Related Factors. B. S. Galang, Manila.—p. 21.

Vitamin C Content of Milk and Vegetable Extracts.—Concepcion and Gargaritano analyzed samples of different kinds of milk, fruit juice and vegetable soup for their vitamin C content by the dye method outlined by Bessey and King. They found that human milk (Filipino) was four times richer in vitamin C than cow's milk and more than two times richer than carabao's milk. The vitamin C content of evaporated milk, when diluted to be equivalent to cow's milk in composition, did not compare favorably with fresh cow's milk. Calamansi (Citrus mitis) and dayap (Citrus aureus) are cheap sources of vitamin C and their use by poor people should be extended. Soup of malungay (Moringa oleifera), kale (Brassica oleracea L.) or petsay (Brassica chinensis L.), prepared by mixing the vegetable with two parts of water by weight, may be used as a milk diluent for infant feeding. They are excellent sources of vitamin C. It is strongly recommended that an additional supply of vitamin C, in the form of calamansi, orange or tomato juice or vegetable soup should be given to infants taking either breast milk or artificial feeding, as a prophylactic measure.

Public Health Reports, Washington, D. C.

54: 413-458 (March 17) 1939

*Mouth Lesions Associated with Dietary Deficiencies in Monkeys. N. H. Topping and H. F. Fraser.—p. 416.
Oral Pathology in Monkeys in Various Experimental Dietary Deficiencies. T. H. Tomlinson Jr.—p. 431.
Study of Experimental Pertussis in the Young Rat. J. W. Hornibrook and L. L. Ashburn.—p. 439.

Buccal Lesions Associated with Dietary Deficiencies.—Topping and Fraser studied the occurrence of pathologic changes in the oral cavity in monkeys on selected diets deficient in vitamin A, D, C or B_2. Certain of the dietary deficiencies tested were associated with the development of varying manifestations of gingivitis, stomatitis, periodontal disease and noma. Noma developed in the buccal mucosa only in monkeys receiving diets deficient in vitamin B_2. Comparable animals maintained on adequate diets showed little or no evidence of such oral conditions. In addition, monkeys maintained on a stock diet showed no evidence of gingivitis or stomatitis when material from affected monkeys was transferred directly to them. Diets supposedly deficient in vitamin A were about as efficient in preventing the development of oral lesions as the artificial control diet. In the remaining deficiency groups, however, there is a definite difference in the numbers developing lesions and the severity of these lesions.

Radiology, Syracuse, N. Y.

32: 261-390 (March) 1939

Roentgenographic Pelvimetry and Fetalometry: Elimination of Errors Due to Movements Between X-Ray Exposures. W. W. Fray and W. T. Pommerenke, Rochester, N. Y.—p. 261.
The Language of Engineers and Radiologists: New X-Ray Terms Proposed: Rhegma, Rhothion, Kludon, Plem, Aith. R. R. Newell, San Francisco.—p. 270.
X-Ray Inquiry into Genesis of Current of Venous Blood and Lymph. K. Mayer, Poznan, Poland.—p. 275.
Note on Use of Clinical Dosage Meters Using Thimble Ionization Chamber. M. C. Reinhard, Buffalo.—p. 282.
*Roentgen Treatment of Leukemia, with Report of Pregnancy in Case of Lymphatic Leukemia. E. K. Harrison and R. J. Reeves, Durham, N. C.—p. 284.
Influence of Low Temperature on Recovery from Roentgen Rays. Evelyn Vanderwilt Cook, Iowa City.—p. 289.
Technic of X-Ray Treatment of Operable Cancer of the Breast Based on Analysis of Keynes' Radium Technic. J. R. Andrews, Cleveland.—p. 294.
Value of Roentgen Examination of Paranasal Sinuses. V. C. Johnson, Ann Arbor, Mich.—p. 303.
Treatment of Acute and Chronic Inflammatory Conditions by Fractional Doses of X-Ray. H. A. Osgood, Boston.—p. 311.
Density of the Central Shadow in Diagnosis of Intrathoracic Lesions. L. G. Rigler, Minneapolis.—p. 316.
Some Experiences, Experimental and Clinical, with Direct Irradiation of Neurologic Tumors During Operation with Low Voltage Radiation. J. R. Carty and B. S. Ray, New York.—p. 325.
Further Consideration of Roentgen Ray Manifestations in Amebic Infections of Large Bowel. J. C. Bell, Louisville, Ky.—p. 332.
Treatment of Hyperthyroidism, with Consideration of Other of the Ductless Glands as a Trigger Mechanism: Based on Observation of 360 Cases. I. W. Jenkins, Waco, Texas.—p. 340.

Roentgen Treatment of Leukemia.—Harrison and Reeves used roentgen therapy in the treatment of forty-seven cases of leukemia of which three were of the aleukemic, twelve of the lymphatic and thirty-two of the myeloid leukemia type. Sixteen patients are still living. The patients were treated by the local application of the rays, general radiation, the so-called "spray method" and a combination of the two methods. The spray method seems superior in that there is no roentgen sickness and more of the bone marrow as well as the circulating blood is irradiated. Patients receiving spray treatments were symptom free for longer periods of time. In addition, in patients treated by the spray method a resistance to the rays develops slowly and hence can be carried over a longer period. The results

from the spray method (84 per cent living) are better than the results of local treatment (22 per cent) or local and spray combined (56 per cent). The authors do not believe that the spray method is likely to cause serious injury to the bone marrow, resulting in aplastic anemia, if the rays are properly administered by competent roentgenologists. If the dose is kept low and frequent blood studies are made, it is not difficult to get the blood to a normal level. The spray method is, of course, contraindicated in the aleukemic form of the disease. They do not feel that the actual life span of the patient is increased, but the useful period of life is distinctly prolonged. Of the forty-seven cases there was a history of previous severe infection in 47 per cent, lending weight to the infection theory.

South Carolina Medical Assn. Journal, Greenville

35: 83-112 (April) 1939

Eclampsia. L. A. Wilson and A. L. Rivers, Charleston.—p. 83.
Newer Physiology of Diabetes Mellitus. S. C. Werch, Charleston.—p. 87.
Removal of Sebaceous Cysts. A. E. Shaw, Columbia.—p. 90.
Some Observations on Blood Cell Sedimentation Rate in General Medical Diagnosis: Its Value as Aid in Differentiating Malignant from Benign Tumors: Analysis of Fifty Cases. J. M. Feder, Anderson.—p. 102.
Treatment of Pellagra. J. M. Ruffin, Durham, N. C.—p. 107.

Southern Surgeon, Atlanta, Ga.

8: 113-190 (April) 1939

Peritoneoscopy. J. C. Ruddock, Los Angeles.—p. 113.
Adjustable Liston Splint with Foot Piece Attached for Handling of Fractures. W. M. Hayes, Hamilton, Ohio.—p. 136.
Fractures of Neck of the Femur: Treatment by Internal Fixation with Adjustable Nails. A. T. Moore, Columbia, S. C.—p. 139.
Gunshot Wounds of Abdomen: I. Consideration of Their General Management. Based on Thirty-Five Personal Cases. A. H. Storck, New Orleans.—p. 148.
Subtrochanteric and High Shaft Fractures of the Femur: Closed Reduction Based on New Anatomic Approach to Treatment. R. Anderson, Seattle.—p. 159.
Treatment of Ingrowing Toenail. A. O. Linch, Atlanta, Ga.—p. 173.

Southwestern Medicine, El Paso, Texas

23: 67-106 (March) 1939

Cardiac Neurosis. R. H. Homan, El Paso, Texas.—p. 67.
Tumors of Oral Cavity. G. W. Jones, Baltimore.—p. 70.
Blind Nailing of Fractures of Neck of Femur. L. W. Breck, El Paso, Texas.—p. 72.
Diagnosis and Treatment of Pneumonia. R. E. Thomas, Los Angeles.—p 78.
Hormones in Pregnancy. A. J. De Pinto, Phoenix, Ariz.—p. 82.
Hypophysial Stalk Tumors: Case Report. J. G. Pasternack and W. M. Boles, New Orleans.—p. 85.

Surgery, St. Louis

5: 327-490 (March) 1939

Distention Factor in Simple Intestinal Obstruction: Experimental Study with Exclusion of Swallowed Air by Cervical Esophagostomy. O. H. Wangensteen and C. E. Rea, Minneapolis.—p. 327.
Carcinoma of the Right Colon. H. K. Ransom, Ann Arbor, Mich.—p. 340.
Acute Pancreatitis: Report of Twenty-Six Cases. L. S. Fallis and G. Plain, Detroit.—p. 358.
Acute Suppurative Appendicitis Complicating Severe Untreated Thyrotoxicosis. J. M. Mora and B. Pearlman, Chicago.—p. 374.
Left Retromesocolic Hernia. B. Halpert, New Orleans.—p. 379.
Hernia Through the Broad Ligament. H. E. Bowles, Honolulu, Hawaii.—p. 382.
Paraduodenal Hernia. J. W. Snyder, Miami, Fla.—p. 389.
Inguinal Hernioplasty: New Modification: Report of 107 Cases. H. E. Stein, New York.—p. 398.
Results of Treatment in Cancer of the Prostate: Review of 275 Cases. C. D. Creevy, Minneapolis.—p. 405.
*Treatment of Postoperative Pulmonary Atelectasis. A. E. Moore, Cincinnati.—p. 420.
Arterial Injections with Stasis in Therapy of Infections. R. dos Santos, Lisbon, Portugal.—p. 436.
Gravity Drainage of Inflammatory Edema: Method for Elevation of an Extremity. J. Knott, Christiansted, Virgin Islands.—p. 444.
Elastic Bandage Boot for Varicose Veins. J. Knott, Christiansted, Virgin Islands.—p. 446.

Postoperative Pulmonary Atelectasis.—Moore states that in the surgical service of the Cincinnati General Hospital any patient developing a sudden or unexpected elevation of temperature or respiratory rate during the first two postoperative days is suspected of having atelectasis until proved otherwise. If a diagnosis is established, the following procedure is carried out: If not already in use, a tight abdominal binder is applied. The patient is changed from Fowler's position to one in which the pillow is removed and the head is dropped flat, leaving the knees elevated. A chair is placed under the foot of the bed and the patient is turned so that his affected side will be up. The physician then stands behind the patient and places one hand on the uppermost shoulder, rolling the patient slightly forward on his abdomen. This puts the main bronchus in a true vertical position and secures the greatest gravitational effect on the bronchial secretions. The patient is instructed to place his uppermost hand on his abdomen, over his wound, and this is reinforced by the free hand of the physician. Occasionally, simply placing the patient in this position initiates violent coughing, but if coughing is not forthcoming the patient should be encouraged to cough. In the majority of cases the mucous plug will be loosened by the first guarded cough and an uncontrollable cough reflex set up with the production of a sizable quantity of mucus. Coughing is encouraged until rhonchi no longer can be felt by the palpating hand. It is not uncommon for such a patient to volunteer the information "that's all." If this fails or if the patient refuses to cough because of incisional pain, further efforts are aimed at loosening the plug. He is asked to take a few deep breaths. If this fails to produce the plug, a sharp blow on the back will often accomplish the desired result. If these maneuvers fail, inhalations of carbon dioxide are given to increase the depth of respirations and this will frequently loosen the plug. If rhonchi still persist and breath sounds are not coming through the involved lung, the patient is forced to remain in the described position for as long as half an hour at a time. During this period steam inhalation of tincture of benzoin is given. The steam thins out the mucus, and the gravitational effect is enhanced by being allowed to act over a period of time. This entire regimen is not used frequently, as the obstructing mucous plug ordinarily can be produced by simple forced coughing. The author has had a marked uniformity of success in relieving postoperative atelectasis by the foregoing type of postural drainage. The most striking relief has occurred in those cases in which the atelectasis is recognized within an hour or two after onset. The efficacy of postural drainage used at the author's clinic for relieving atelectasis is illustrated by the report of six cases.

Surgery, Gynecology and Obstetrics, Chicago

68: 723-850 (April) 1939

Excision of the Superior Hypogastric Plexus (Presacral Nerve) for Primary Dysmenorrhea. J. V. Meigs, Boston.—p. 723.
Consideration of Certain Types of Benign Tumors of the Placenta. A. A. Marchetti, New York.—p. 733.
Blood Iodine Levels Related to Recurrence of Hyperthyroidism. H. J. Perkin and R. B. Cattell, Boston.—p. 744.
*Influence of Papaverine on Muscular Tone of the Intestinal Tract. J. A. Bargen and R. J. Jackman, Rochester, Minn.—p. 749.
Study of Fluid and Sodium Chloride Balance in Patients Treated with Continuous Suction Applied to Indwelling Duodenal Tubes. J. R. Paine and W. D. Armstrong, Minneapolis.—p. 751.
Primary Streptococcic and Pneumococcic Peritonitis in Children: Study of Sixty-One Cases with Report of Two Interesting Recoveries. E. T. Newell Jr., Chattanooga, Tenn.—p. 760.
Arrhenoblastoma. M. B. Dockerty and W. C. MacCarty, Rochester, Minn.—p. 767.
Spondylolisthesis. E. M. George, New York.—p. 774.
Tracheotomy. T. Cawthorne, London, England.—p. 782.
New Aseptic Double-Valved Tubogastrostomy. J. A. Glassman, Chicago.—p. 789.
Surgical Treatment of Spastic Paralysis. C. H. Heyman, Cleveland.—p. 792.
Technic of Thyroidectomy Permitting Use of Silk. D. Guthrie, Sayre, Pa., and M. J. Brown, Davenport, Iowa.—p. 801.
*Tubal Resection as Treatment for Recurrent Gonorrheal Salpingitis. H. C. Falk and Geza Weitzner, New York.—p. 810.
Encapsulated Intramedullary Tumor Involving the Whole Spinal Cord from Medulla to Conus: Complete Enucleation with Recovery. G. Horrax and D. G. Henderson, Boston.—p. 814.
Acute Fractures of Carpal Scaphoid. R. F. Jaekle and A. G. Clark, San Francisco.—p. 820.
Intraperitoneal Hemorrhage from Ruptured Ovarian Retention Cysts: Corpus Luteum and Graafian Follicle Cysts. F. I. Harris and M. J. Groper, San Francisco.—p. 824.
Conservative Surgical Treatment of Noncalculous Hydronephrosis. J. T. Priestley, Rochester, Minn.—p. 832.

Influence of Papaverine on Intestinal Tone.—Bargen and Jackman state that morphine causes an increase in motility and tone of the large and small intestine of man. The constipating effect of morphine may be attributable to the regions of

spasm which it initiates. Papaverine hydrochloride alone or in combination with pantopon has been found of value in relieving the distressing abdominal cramps and frequent purulent, bloody discharges associated with the acute phase of chronic ulcerative colitis and other acute dysenteries. Experimental evidence has substantiated the antispasmodic effect of this papaverine compound. The papaverine compound has certain advantages over morphine sulfate in cases in which it is desired to immobilize or put the intestine at rest.

Tubal Resection for Recurrent Gonorrheal Salpingitis.—Falk and Weitzner offer cornual resection of the tubes as a surgical procedure for the cure of recurrent gonorrheal salpingitis. It involves a minimum of surgical trauma and in 112 of their cases they state that there was no primary mortality or primary pelvic morbidity, the anatomic results were perfect in 70 per cent, good in 14 per cent and fair in 7 per cent, 79 per cent of the patients were symptom free and 21 per cent had slight symptoms, 87 per cent were fit for manual labor and 13 per cent were partially incapacitated, and there were no reoperations for pelvic disease and no readmissions for recurrent salpingitis.

Texas State Journal of Medicine, Fort Worth

34: 727-808 (March) 1939

Diagnosis of Lesions of Right Upper Abdominal Quadrant. W. Walters, Rochester, Minn.—p. 732.
Limitations of Transurethral Prostatectomy. R. M. Nesbit, Ann Arbor, Mich.—p. 736.
The Roentgenogram in Intestinal Obstruction: Its Value and Its Limitations. P. E. Wigby and W. H. Cochran, Dallas.—p. 740.
Clinical Use of the Flexible Gastroscope. C. O. Patterson and M. O. Rouse, Dallas.—p. 746.
Internal Hodgkin's Disease. E. Randall Jr., Galveston.—p. 751.
Artificial Fever Therapy in a Private Hospital. A. A. Ledbetter, Houston.—p. 753.
Thoracoplasty in Treatment of Pulmonary Tuberculosis. E. H. Caldwell, Tyler.—p. 757.
Relation of Surgical Collapse of Tuberculous Cavities to Public Health. J. W. Nixon, San Antonio.—p. 760.
Primary Complex of Childhood Tuberculosis: Analysis of X-Ray Examinations of 857 Cases with Positive Mantoux Reactions. F. H. Tyner, Port Arthur.—p. 763.
Progressive Deafness: Its Diagnosis and Treatment. R. Z. Howard, Fort Worth.—p. 767.
Management of Juvenile Cataract: Analysis of Fifty Cases. H. L. Hilgartner Jr., Austin.—p. 770.
Maxillary Sinusitis of Oral Origin. P. W. Malone, Big Spring.—p. 774.
*Vincent's Infection and Its Relation to Subclinical Scurvy. H. M. Williams, Fort Worth.—p. 779.

Relation of Vincent's Infection to Scurvy.—Williams has seen a large number of indigent patients at the Preventive Medicine Clinic and Immunization Station who showed marked signs of gingivitis. Smears taken disclosed Vincent's organisms in abundance. He states that all the patients admitted to this clinic are from families in which the wage earners are unemployed, are employed by WPA or have other low salaried employment. The majority of these are unable to provide sufficient fresh fruits and vegetables or other antiscorbutic foods, and of those who might be able to provide these in sufficient quantities many are unaware of the necessity for these dietary elements or do not place enough importance on the necessity for them. Realizing that there was probably a considerable amount of subclinical scurvy among these people, the author carried out an experiment to determine, if possible, what effect the addition to their diet of a sufficient amount of a pure crystalline vitamin C acid in tablet form would have on the treatment of Vincent's infection in this group. In this way an accurate check on the minimal amount of vitamin C taken by each patient could be made. Only those patients (twenty-two) who were considered to be getting a definite subminimal amount of antiscorbutic foods in their diet were studied. As controls for the experiment, patients with the same requirements as the test group received the same treatment except for the ascorbic acid. The treatment given consisted in the topical application once daily of 7 per cent chromic acid followed by full strength hydrogen peroxide. Saturated solution of sodium perborate was used as a mouth wash and gargle four or more times a day, and one or two, according to age, 25 mg. tablets of ascorbic acid. The patients were visited once or twice each week by a member of the public health nursing staff, who supplied the patients with the necessary supplies and instructed them as to the proper means of treatment. Smears from the gums and throats were made at frequent intervals. The results obtained, although not conclusive, do indicate marked improvement following the use of ascorbic acid in most cases in which a definite vitamin C deficiency was found to exist. Of the twenty-two patients treated all showed either clinical improvement or marked decrease in the relative number of spirillae on smears or both.

Western J. Surg., Obst. & Gynecology, Portland, Ore.

47: 107-168 (March) 1939

Significance of Estrogenic Hormones in Carcinogenesis. L. A. Emge, San Francisco.—p. 107.
Granulosa Cell Tumor of the Ovary. Margaret Schulze, San Francisco.—p. 114.
Disgerminoma and Arrhenoblastoma. V. E. Dudman, Portland, Ore.—p. 128.
*Use of Sulfanilamide in Postabortal and Puerperal Infections. B. J. Hanley and D. Golenternek, Los Angeles.—p. 137.
Antagonism Between Thyroxine and Vitamin A. C. Wegelin, Berne, Switzerland.—p. 147.
Adenomatous Goiter with Hyperthyroidism. S. F. Haines, Rochester, Minn.—p. 155.

Sulfanilamide in Obstetrics.—Hanley and Golenternek tried to determine the value of sulfanilamide in postabortal and puerperal infections. They review 150 cases from the infected obstetrics wards in the Los Angeles General Hospital. In seventy-five of these cases sulfanilamide was used along with any measures in their routine treatment which seemed indicated. The other seventy-five patients were given the same type of treatment except that they did not receive sulfanilamide. Of the seventy-five cases of sepsis treated with sulfanilamide thirty-two showed apparent improvement, such that the period of hospitalization was shortened an average of 2.8 days when compared with the similar group not receiving this drug. In twenty cases the results were called doubtful as there were minor complications and the temperature did not subside at the given time. In the remaining twenty-three cases the results were of no comparative value. However, this group contained all the cases in which the infection had extended beyond the walls of the uterus, with resultant peritonitis, septicemia, pelvic abscess or other complications not directly related to the original infection; thus quick recovery could hardly be expected. No improvement was observed in any case of thrombophlebitis in which the drug was used.

Wisconsin Medical Journal, Madison

38: 169-252 (March) 1939

Office Treatment of Eye Injuries. W. L. Benedict, Rochester, Minn.—p. 187.
Type Determination of Pneumococci. C. Lenore Robinson, Madison.—p. 190.
Comments on 1,010 Obstetric Cases in Hospital and Home. W. Smith, Ladysmith.—p. 196.
Uterus Didelphys: Report of Case. J. J. Gramling Jr., Milwaukee.—p. 200.
Secondary Anemias of Infancy. R. L. Cowles, Green Bay.—p. 202.
Review of 1,012 Cases of Induction of Labor. G. J. Schwartz, Kenosha.—p. 205.
Warts and Moles. M. J. Reuter, Milwaukee.—p. 207.

Yale Journal of Biology and Medicine, New Haven

11: 277-408 (March) 1939

The "Throat Distemper" of 1735-1740: Part II. E. Caulfield, New Haven, Conn.—p. 277.
*Erysipelas in Infants. T. Willis, New Haven, Conn.—p. 337.
Skin Reactions to an Extract Prepared from a Gonococcus Bouillon Filtrate. N. E. Rossett, New Haven, Conn.—p. 345.
Interrelationships Between Fetal Weight, Size of Pelvic Inlet and Maternal Height. H. Thoms and M. S. Godfried, New Haven, Conn.—p. 355.
Familial Occurrence of Icterus Gravis, Congenital Anemia of the Newborn and Erythroblastosis Fetalis: Case Study. H. C. Miller, New Haven, Conn.—p. 363.
Prophylaxis of Experimental Anthrax Infection with Various Hormone Preparations. L. Weinstein, New Haven, Conn.—p. 369.
Studies on Phagedenic Ulcers. Agnes V. Bartlett, Boston.—p. 393.

Erysipelas in Infants.—Six cases of erysipelas in infants less than 2 months of age that were cured through the use of transfusions and sulfanilamide in large doses are reported by Willis. Complications, local recurrences of a streptococcic lesion, occurred in two patients. They slowly responded at different rates to continued use of the drug.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Experimental Pathology, London

20: 1-108 (Feb.) 1939

Protective Value of Vi and O Antibody in Relation to Virulence of Strains of Bacterium Typhosum. D. W. Henderson.—p. 1.

Experiments with Vi Antigen of Bacterium Typhosum and with Two New Antigenic Substances Extracted from Strains of This Organism. D. W. Henderson.—p. 11.

Effect of Gastric Mucin on the Pathogenicity of the Meningococcus and Other Organisms, with Particular Reference to Its Fractionation. C. G. Anderson and R. K. Oag.—p. 25.

Spectrographic Observations on Urinary Porphyrins: Nature of Combined Form of Coproporphyrin Found in Urine. Eleanor M. Kapp.—p. 33.

Nutrition of Corynebacterium Diphtheriae (Types Mitis, Gravis and Intermediate). W. C. Evans, F. C. Happold and W. R. C. Handley.—p. 41.

Further Observations on Filtrable Tumors Induced in Fowls by Injection of Tar. J. McIntosh and F. R. Selbie.—p. 49.

Antigenic Surface of Smooth Brucella Abortus and Melitensis. A. A. Miles.—p. 63.

Properties of Antigenic Preparations from Brucella Melitensis: I. Chemical and Physical Properties of Bacterial Fractions. A. A. Miles and N. W. Pirie.—p. 83.

Chemical Change Occurring During the Lysis of Bacterium Coli by Bacteriophage. Antoinette Pirie.—p. 99.

British Medical Journal, London

1: 371-430 (Feb. 25) 1939

Health and the State. W. Elliot.—p. 371.

Treatment of Trichinosis: Review of Methods. V. D. van Someren.—p. 376.

Bronchoscopy in Pulmonary Tuberculosis. H. V. Morlock and E. H. Hudson.—p. 381.

*Treatment of Diphtheria with Refined Antitoxin. A. Hutchison.—p. 384.

Use of Gas-Protective Clothing in Singapore. E. R. Sorley.—p. 385.

Treatment of Diphtheria with Refined Antitoxin.—Hutchison states that, from January to August 1938, 200 diphtheria patients were treated in Belvidere Hospital with a refined antitoxin prepared by Pope's (1938) process. This antitoxin is prepared by a process of enzyme disaggregation followed by differential heating. The antitoxin was administered without desensitization of the patient, even though fifty of the 200 patients gave a history of previous injection of serum. Patients with cervical adenitis were given chewing gum. There were no reactions when the serum was given by the intramuscular route and only slight reactions when it was given intravenously. There were five deaths, two of which occurred in patients who were moribund on admission and who died within a few hours; the other three were due to cardiac paralysis. The percentage of gravis bacilli in the present series (thirty-one) is high compared with that of Carter in the same area (3.1 and 10.5 in different series) and this makes the 2.5 per cent death rate a strikingly low figure. Chewing gum appears to be useful in adenitis, apparently causing massage of the cervical glands by the action of the jaw in chewing.

Glasgow Medical Journal

13: 57-104 (Feb.) 1939

Pulmonary Carcinoma: Pathologic Study of Series of Cases, with Special Reference to Route of Spread and to Factors That Determine Mode of Spread. C. E. Lumsden.—p. 57.

Indian Medical Gazette, Calcutta

74: 65-128 (Feb.) 1939

Chronic Ulcerative Colitis. R. N. Chopra and P. N. Ray.—p. 65.

Aberrant Pancreatic Tissue in the Alimentary Tract. M. M. Cruickshank.—p. 74.

The Heart in Anemia. G. R. McRobert and D. Govinda Reddy.—p. 75.

Local Provision of Splints and Tackle for Fractures and Joint Infections in India. F. H. Whyte.—p. 77.

Treatment of Otitis Media. B. N. C. Roy.—p. 80.

Primary and Secondary Tuberculosis. P. G. Gollerkeri.—p. 82.

Atypical Amyloid Disease of the Liver. M. D. Ananthachari.—p. 84.

Investigation of Calcutta Milk Supply for Presence of Tubercle Bacilli. R. K. Goyal and S. Lal.—p. 86.

Protection of Antiplague Workers. R. C. Bhargava.—p. 87.

Note on Interesting Serologic Type of Leptospira in the Andamans. B. M. Das Gupta.—p. 88.

Disposal and Utilization of Horse Dung and Stable Litter by Composting. K. A. Patwardhan.—p. 88.

Journal of Laryngology and Otology, London

54: 121-172 (March) 1939

Osseous Affections of the Maxillary Sinus. E. G. Collins.—p. 121.

Lympho-Epithelioma in the Nasopharynx. F. C. W. Capps.—p. 133.

Journal Obst. & Gynaec. of Brit. Empire, Manchester

46: 1-200 (Feb.) 1939

*Clinical Experiences with a New Synthetic Estrogen Stilbestrol (Diethyl-Stilbestrol): Report to the Therapeutic Trials Committee of the Medical Research Council. R. J. Kellar and J. K. Sutherland.—p. 1.

Metastasis of Maternal Tumor to Products of Gestation. J. Gray, M. Kenny and E. P. Sharpey-Schafer.—p. 8.

Hormone Therapy in Gynecologic Conditions. D. MacLeod.—p. 15.

Iniencephalus. J. Howkins and R. S. Lawrie.—p. 25.

Carcinoma of the Body of the Uterus. W. G. Cosbie and D. N. Henderson.—p. 32.

Teratoma of Neck of Fetus with Acute Hydramnios: Case. J. St. George Wilson.—p. 44.

Effect of Vitamin E Deficiency on the Rat. M. M. O. Barrie.—p. 49.

Analgesia in Domiciliary Midwifery. J. Elam.—p. 61.

Case of Double Vulva with Hematometra on One Side. N. G. Patterson and J. P. Maxwell.—p. 71.

Spontaneous Rupture of Three Months Pregnant Uterus Following a Classic Caesarean Section and an Abdominal Pregnancy. B. H. Swift.—p. 74.

Delivery of Live Infant After Radiologic Diagnosis of Intra-Uterine Death. G. P. Milne.—p. 77.

Hemorrhagic Retinitis in Vomiting of Pregnancy. J. A. Waterman.—p. 79.

Protection of the Unborn Child in Germany. H. Stadler.—p. 82.

Technic of Local Anesthesia and Experiences in Gynecologic Abdominal Operations. J. Frigyesi.—p. 91.

Stilbestrol in Menopause Symptoms.—Kellar and Sutherland used stilbestrol, a synthetic estrogenic drug, in the treatment of the menopausal syndrome, senile vaginitis, vulval leukoplakia, secondary amenorrhea and for inhibiting lactation. The results were more or less comparable to those obtained with natural estrogen. Therefore it appears that stilbestrol can replace the natural estrogens in all their therapeutic applications, and also it is a drug that is effective by mouth. It apparently has a true localized effect on the genitalia and has presumably the power to depress certain anterior pituitary functions, for example to suppress lactation. In three patients in whom uterine bleeding followed a course of stilbestrol, only scanty endometrium was obtained at biopsy. More and more evidence is being produced to show that uterine bleeding is primarily a local vascular phenomenon and is not necessarily directly related to the state of the endometrium. Thus, bleeding can occur from a preovulation or premenstrual or atrophic endometrium. When stilbestrol was given intramuscularly there were no toxic effects. When it was given orally nausea without vomiting was produced in three patients but in all these symptoms disappeared even when the use of the drug was continued.

Lancet, London

1: 431-490 (Feb. 25) 1939

*Mode of Action of Drugs of Sulfonamide Group. J. McIntosh and L. E. H. Whitby.—p. 431.

Triazol 156 in Chronic Schizophrenia. I. Atkin.—p. 435.

*Remissions in Schizophrenia: Insulin and Convulsion Therapies Compared with Ordinary Treatment. H. Stalker, W. M. Millar and J. M. Jacobs.—p. 437.

Cardiazol Therapy of Schizophrenia: Some Statistical Data. F. Reitmann.—p. 439.

Boeck's Sarcoidosis: Case Record. H. B. Stallard and C. B. V. Tait.—p. 440.

Atmospheric and Surface Sterilization by Aerosols. R. J. V. Pulvertaft, G. C. Lemon and J. W. Walker.—p. 443.

Hematoma of Flexor Tendon Sheaths of Hand Following Penetrating Wounds. E. A. Devenish.—p. 447.

Introduction of Iodized Oil into Tracheobronchial Tree. P. Ellman.—p. 448.

Action of Drugs of Sulfanilamide Group.—McIntosh and Whitby studied the bodily defense mechanism and the action of sulfanilamide and its derivatives on bacteria. Their experiments support the view that sulfanilamide drugs have no stimulating action on leukocytes, phagocytes or the specific immune defenses of the body. Furthermore, since an in vitro effect can be demonstrated in serum or broth as well as in whole blood, it would not seem that leukocytes are a primary requirement. Concerning the action of the drugs on the micro-organisms, the authors explain (1) the capsular degeneration, (2) the failure of the drugs to check local multiplication and to prevent invasion of the body, (3) the time lag before the drugs become effective in vivo or in vitro and the tendency even to primary stimulation

of growth, (4) the quantitative relationship between the effective dose of the drug and the number of bacteria, (5) the fact that the drugs act best on young actively multiplying virulent organisms and (6) the variations in in vitro activity according to the medium in which the test is made. One explanation of the six points would be that in the sulfanilamide drugs substances have at last been found which exert a simple germicidal action in vivo as well as in vitro. Such an explanation would mean that the action is in striking contrast with that of the germicides phenol, acriflavine and brilliant green, which the authors have tested and found to show no evidence of a "lag" in action and certainly no tendency to exert an initial stimulation on the organism. The action appears to be much more subtle than that of a simple germicide. The failure of the drugs to check the initial local multiplication and invasion is obviously due to the "lag" in action, and the lag suggests a slow combination or neutralization by the drug operating on some essential food substance or enzyme. That combination or neutralization occurs is suggested by the quantitative relationship between drug and bacterium. A reasonable interpretation is that, in the case of streptococci, when either sulfanilamide or sulfapyridine is present, peptone broth supplies something to the organism which blood lacks, whereas in the case of pneumococci both blood and broth lack something essential to the organism. It is clear that, since peptone inhibits the action of both sulfanilamide and sulfapyridine on streptococci but not on pneumococci, the two organisms differ in the way in which the drug acts on them, and, although the modes of action may be the same in principle, there must be differences in detail. The most rational explanation of these experimental facts is that the sulfanilamide drugs in some way block the vital food supply of bacteria, the two drugs being equally effective in blocking the vital food for streptococci but sulfapyridine being decidedly more effective than sulfanilamide in blocking that for pneumococci. It is conceivable that the bacterial enzyme of which this food factor is the substrate should be inactivated. Rough and avirulent organisms, insusceptible to these drugs, do not have the exacting food requirements of virulent bacteria, and the failure of the sulfanilamide drugs to affect virus infections could be explained by the feeble enzymatic action which viruses are known to have. Therefore the mode of action of sulfanilamide and its derivatives is most probably bound up with the inactivation of bacterial enzymes, but the complete solution of the problem must depend on activities of the bacterial chemist.

Remissions in Schizophrenia.—Stalker and his colleagues compare the results obtained in the treatment of 218 cases of schizophrenia divided into three series according to whether treatment was by ordinary hospital methods, by hypoglycemia or with convulsant drugs. There was no significant difference in the numerical results obtained in schizophrenia by the three methods. Spontaneous remissions occurred most often in acute schizophrenic illnesses which could not be fitted into the standard subgroups, and in cases in which the affect is well preserved and there is little or no disharmony between mood and thought. Hypoglycemia gave the best results in the paranoid subgroup and in cases in which the affect is well preserved. There were no important complications. Convulsion therapy appeared to be best suited for stupor reactions. It was also useful in cases of psychoneurosis resistant to psychotherapy. The disadvantages of the treatment are that about half the patients object to it and that injuries can occur. Occasionally patients were made worse mentally. The field of special treatments is limited, but each should be used in the special type of case. They afford the best chance of recovery to a potentially recoverable patient whose illness is dragging on. They reduce the average duration of hospital treatment.

Medical Journal of Australia, Sydney

1: 209-248 (Feb. 11) 1939

Evolution of Anesthesia. G. Brown.—p. 209.
Role of Iodine (Potassium Iodide) in Experimental Hyperthyroidism. V. M. Trikojus.—p. 220.
Position of Orthoptics in Headache from Eye Strain. J. D. Maude.—p. 224.
Operation for Recovery of Paralysed Muscles in Otherwise Normal Groups. N. D. Royle.—p. 227.
Serologic Test for Cancer: Part III. W. Moppett.—p. 227.

Practitioner, London

142: 241-360 (March) 1939

Common Vascular Disorders of Extremities. J. R. Learmonth.—p. 241.
Skin Diseases of Hands and Feet. H. MacCormac.—p. 249.
Some Minor Surgical Conditions of Hands and Feet. R. J. M. Love.—p. 261.
Congenital Abnormalities of Extremities. D. Browne.—p. 270.
Fractures, Dislocations and Sprains at Wrist and Ankle. R. S. Woods.—p. 278.
Management of Flatfoot. J. Bruce.—p. 299.
Stilbestrol. E. C. Dodds.—p. 309.
Therapeutics and Toxicology of Acetylsalicylic Acid. P. Hamill—p. 314.
Actinomycosis. Z. Cope.—p. 319.
Instructions for Patients Suffering from Angina Pectoris. J. W. Linnell and W. A. R. Thomson.—p. 327.
Treatment of War Injuries in Base Hospitals. E. W. H. Groves.—p. 330.
Diet in Health and Disease: XXI. Artificial Feeding of Infants. A. G. Maitland-Jones.—p. 341.

Tubercle, London

20: 205-252 (Feb.) 1939

*Epituberculosis. W. B. Wood.—p. 205.
Effect of Tuberculous Infection on Carbonic Anhydrase of Rabbit's Blood. Cecilia Shiskin.—p. 227.

Epituberculosis.—Wood believes that epituberculosis is a manifestation of postprimary tuberculosis in childhood and occurs in a period characterized by enlargement of the bronchial glands and a tendency to exudation. The chief factor in its production is atelectasis due to bronchial blockage by tuberculous glands. A secondary factor is probably exudation into the alveoli and engorgement, the result of lymph stasis and vascular congestion. Tuberculous allergy possibly also plays a part for allergic reactions are common in the second stage. If gland caseation leads to rupture of the wall of a bronchus, a caseous bronchitis or bronchopneumonia may entirely alter the clinical picture and cause permanent damage to the lung. If the bronchial wall escapes such ulceration, restitution can occur and the collapsed lobe may return to its original condition. A failure to reexpand must in either event give rise to bronchiectasis, which is a common result of tuberculous adenitis. One cause of the hilus flare phenomenon is atelectasis of the right middle lobe due to bronchial compression. Collapse of the apical division of the lower lobe may cause a similar shadow and have a comparable origin. Many of the triangular shadows on the hilus are evidently due to a local atelectasis. Care is needed in their interpretation because other lesions of a tuberculous and nontuberculous nature may cause similar opacities. The term "epituberculosis," which has served its purpose and drawn attention to the condition, might now be abandoned.

Tohoku Journal of Experimental Medicine, Sendai

35: 123-322 (Feb.) 1939. Partial Index

Operation for and Importance of Permanent Closable Pancreatic Fistula. W. N. Boldyreff and W. F. Martin.—p. 144.
Leech Method of Blood Analysis—New Micromethod: VII. Determination of Blood Sugar. H. Ohsako.—p. 155.
Further Report on Blood Picture of Lactating Women. Y. Kokubo.—p. 157.
*How Will Sexual Cycles of Healthy Women Influence Blood Picture? Y. Kokubo.—p. 243.
Increase in Sugar Content of Skin and Reduction in Glycogen Content of Liver After Fat Tolerance Test. Y. Sikinami and H. Hosokawa.—p. 257.
Studies on Modification of Serum Protein and Its Colloid-Osmotic Pressure by Oral Administration of Large Quantities of Water in Healthy Persons and in Patients with Hypertension and Renal Diseases. K. Shida.—p. 271.

Sexual Cycle and Blood Picture.—The studies reported in this paper by Kokubo were made on three healthy unmarried women. In one of them the cycles were of normal length (from twenty-eight to twenty-nine days), whereas in the other two they were quite irregular. The blood specimens were withdrawn from the ear lobe. The tests were repeated at weekly intervals for a period of three months. The results of the tests are listed in tables. The author differentiates four different periods in the cycle: the premenstrual, the menstrual, the postmenstrual and the interval period. Pointing out the common features of the blood pictures of the three healthy women, he says that the erythrocyte count decreased and fell to the minimum in the menstrual period. Hemoglobin decreased in the same period. The platelet count fluctuated regularly in a way characteristic of each person through one whole sexual cycle. Arneth's

nuclear shift of neutrophils was almost unaffected by the sexual cycles. Pathologic granules showed an inclination to decrease in the menstrual period and were within normal limits. Though hemosedimentation showed generally a normal value through the sexual cycles, there was an inclination for it to decrease one or two weeks after menstruation. Thus sexual cycles of women seem to cause a regular fluctuation of the blood picture, though subject to individual fluctuation, through the whole cycle.

Bruxelles-Médical, Brussels

19: 619-647 (March 19) 1939

Clinical Instruction in Social Medicine. R. Sand.—p. 619.
Accessory Cutaneous Reactions of the Clinical Syndrome of Hyperfolliculinism. A. Desaux.—p. 622.
*Early Regional Edema as Symptom of Lymphogranuloma Venereum. J. May.—p. 628.

Edema in Venereal Lymphogranuloma.—The regional edema of the abdominal wall, thigh and inguinal region, to which May gives his attention in this report, can be detected readily by palpation (preferably without rubber gloves). It is not accompanied by coloration of the skin, and it is soft, that is, it does not pit on pressure with the finger. Its extension varies greatly; often it is limited to the abdominal wall. If this is the case, detection may be difficult. The author recommends pinching of the skin or making small pleats at the level of the umbilicus along a line which corresponds to the entrance of the umbilical canal. Along this line the edema is most readily detected. When the edema invades the thigh, it is localized along the femoral line. In case of localization in the surroundings of the penoscroto-inguinal angle, the regional edema is always perceptible with the eye as well as by touch. The appearance of this early edema has no connection with the edema which may develop following incorrect interventions on the lymphatic mass. It originates in changes of the lymphatic vessels, which in turn are caused by the virus of venereal lymphogranuloma. The duration and evolution of the regional edema vary. At the author's clinic this symptom is searched for because it confirms the existence of the venereal lymphogranuloma which has been demonstrated by the reaction of Frei. However, the regional edema is of especial value in cases in which the venereal lymphogranuloma is associated with other venereal disorders such as gonorrhea, chancroid, fusospirillosis, ulcerating granuloma of the pudenda and syphilis. The infection with venereal lymphogranuloma and gonorrhea may be simultaneous or the gonorrhea may appear first. In the latter cases the venereal lymphogranuloma may develop at the end of the third or fourth week, when the gonorrheal urethritis has already been ameliorated by antigonococcic treatment. At this time the author observed the development of the regional edema. In cases in which the infection with venereal lymphogranuloma and gonorrhea is simultaneous the patient may present the symptoms of both disorders, but in some instances of simultaneous infection the venereal lymphogranuloma is detected only by the Frei reaction. The author further cites a case of chancroid in which the regional edema made him think of association with venereal lymphogranuloma, and the Frei reaction corroborated this suspicion. In a previously reported case of regional edema the Frei reaction proved positive and fusospirillosis was detected. Regarding the possible concurrence of venereal lymphogranuloma with ulcerating granuloma of the pudenda, the author says that as yet he is unable to decide this because the latter disorder is rare in Uruguay; nevertheless cases have been observed which suggest such a concurrence. Taking up the association of syphilis and venereal lymphogranuloma, he points out that Chevalier and Bernard have reported such observations and he shows that in the concurrence of these two venereal disorders the regional edema is an especially valuable symptom.

Lyon Chirurgical, Paris

36: 1-128 (Jan.-Feb.) 1939

*External Pancreatic Secretion of Persons Having Undergone Gastrectomy. P. Santy, P. Mallet-Guy, M. Chambon and P. Folliet.—p. 9.
Spinofacial Anastomosis for Bilateral Traumatic Facial Paralysis: Late Results. H. Costantini and E. Curtillet.—p. 50.

External Pancreatic Secretion After Gastrectomy.—Santy and his associates point out that, in the course of regular control examinations of patients who had undergone gastrectomy for ulcer, they were surprised at the slowness and often the incompleteness with which the patients regained their weight. Diverse factors may be cited as possible explanations for this inadequate increase in weight. As regards the surgical technic, it is said that the majority of the patients had undergone an extensive gastrectomy. In some of the patients a faulty regimen can be held responsible for the fact that they failed to regain their normal weight, because for professional reasons many were unable to fractionate or multiply their meals, which is advisable for at least a certain number of months after the operation. However, there is a large number of cases in which neither of these factors can be held responsible for the persistent disturbance in assimilation. To throw more light on this problem the authors made studies on 128 patients in whom a gastrectomy had been performed more than six months and up to ten years previously. In a large number of these patients they verified roentgenologically the function of the gastric stump and of the gastrojejunal anastomosis, they determined the gastric acidity and finally, whenever it was possible, they studied the external pancreatic secretion. The latter factor is the one to which the authors give especial attention in this report. The methods employed in the study of the external pancreatic secretion were (1) gastrojejunal tubage, which permits the collection of the secretions of the duodenal papilla, (2) the stimulation of the pancreatic secretion by intrajejunal instillation of solutions of hydrochloric acid and (3) the measurement of the lipase activity of the pancreatic juice. The authors describe the results obtained with these tests in thirty-nine patients. Summarizing the results of the studies on the lipasic activity, they state that in fourteen of the patients the lipasic activity was within normal limits (35 to 55), eighteen had a weak lipasic activity (15 to 35), four had values between 10 and 15 and in the other three the results were practically nill. It was found that these values had no relation to the time that had elapsed since the operation, to the functional activity, to the gastric acidity or to the weight of the patient before and after the intervention. Thus the variations in the lipasic activity of the pancreatic juice do not seem to intervene directly and exclusively in the persistent emaciation of the patients having undergone gastrectomy. The authors think that factors like the rapidity of the gastric passage, the degree of anachlorhydria and the difficulties encountered by the patients in adhering to special modes of alimentation probably play a part in the emaciation that follows gastrectomy. But the disturbances in the humoral process regulating the pancreatic secretion plays doubtlessly a significant part. Attempting to explain the instability of the mechanism of eliciting the pancreatic secretion in gastrectomy patients, the authors say that it appears that an unknown factor disturbs the hormonal process which releases the secretion. The gastrectomy may introduce some perturbation in the conditions that are indispensable in the function of the pancreas. It is suggested that circulatory factors, particularly vasomotor mechanisms, which play a part in the pancreatic secretion, are damaged by gastrectomy.

Presse Médicale, Paris

47: 377-392 (March 11) 1939

*Indications for Adrenalectomy in Thrombo-Angiitis: Late Results in Three Cases. R. Leriche.—p. 377.
Conjoined Twins. P. Anokhine.—p. 379.

Adrenalectomy in Thrombo-Angiitis.—Leriche says that, instead of carefully studying the treatment of thrombo-angiitis in the different stages of its evolution, all sorts of theoretical arguments have been advanced to exclude adrenalectomy from the legitimate therapeutic attempts. He believes that this has been a mistake, for in his opinion adrenalectomy is the most efficacious of operations directed against arteritis in the cases in which it is indicated. In this paper he relates his experiences with adrenalectomy in carefully selected cases. One of his patients, a dentist, was adrenalectomized in March 1927 and was examined again more than eleven years after the operation. The detailed clinical history of this case indicates that adrenalectomy on the left side was done only after other therapeutic measures had failed. On the day after the operation the patient called attention to disappearance of the pains. The recovery from the operation was uneventful. About a year after the operation the patient stated that he was not troubled by claudication, that walking caused no pain and that he was able to work

eight hours a day. The patient was examined several times after this, the last time in May 1938, more than a year after the adrenalectomy. At that time the arterial status was still excellent. Another patient, for whom the author performed adrenalectomy in 1926, was examined again twelve years later and, as regards the arterial status, was completely cured. Information received from a third patient, who was subjected to adrenalectomy almost fourteen years before, revealed that he likewise had been free from complaints. In the last part of this report the author points out that in the course of twenty years he and his collaborators performed approximately 1,000 operations for various forms of arteritis. On the basis of the experiences he gained in the course of these years he discusses the indications for adrenalectomy, sympathectomy and arteriectomy.

Helvetica Medica Acta, Basel

6: 1-144 (Feb.) 1939. Partial Index

Medicine and Problems of Demography. A. Labhardt.—p. 3.
Technic and Clinical Application of Planigraphy. W. Bronkhorst.—p. 64.
*Cardiac Disturbances in Diabetes Mellitus. R. Hegglin.—p. 89.
Respiratory Function of Blood in Erythremia (Vaquez-Osler's Disease). F. Mainzer and P. Hersch.—p. 102.
Tumors Deriving from Craniopharyngeal Canal (Erdheim). R. Fritzsche.—p. 114.
Enterocystomas with Own Nervous Apparatus. C. M. Du Pan and G. Will.—p. 128.

Cardiac Disturbances in Diabetes Mellitus.—Hegglin investigated whether there are connections between diabetes mellitus and cardiac disturbances and what effects insulin exerts on the heart. His studies were made at the medical clinic of the University of Zurich. He found that the combination of diabetes mellitus and heart disease is comparatively frequent. The heart does not escape the general damage that is produced in the organism by the severe metabolic disturbance. To be sure, this applies chiefly to aged persons with diabetes. Whether heart disease and particularly coronary sclerosis develops also on the basis of juvenile diabetes, the author is unable to state. The administration of large doses of insulin to aged persons with diabetes results in impairment of the cardiac function. This does not imply that insulin is harmful also when given in small doses. Although in a few cases electrocardiographic changes were observed even after small doses, there never was a severe cardiac impairment, especially a cardiac infarct. In the cases in which cardiac infarct and diabetes concurred, no insulin treatment had preceded the development of the infarct. On the other hand, the large doses of insulin which are required for the treatment of diabetic coma may produce severe myocardial damage. For this reason aged persons with diabetes must be kept under close observation in order to avoid coma and its circulatory complications. By means of electrocardiographic studies it was possible to determine that a circulatory weakness during diabetic coma is chiefly due to a myocardial weakness; that is, it is not only of peripheral but also of cardiac origin. Consequently the therapy of the circulatory weakness must attempt to strengthen the heart by strophanthin and to counteract the peripheral insufficiency with the usual remedies. Moreover, it is important to avoid an additional myocardial impairment by insulin; the quantity of insulin should be just enough to counteract the acidotic disorder of the metabolism, but a hypoglycemia should be avoided.

Archivio Italiano di Anatomia, Bologna

9: 377-508 (Feb.) 1939. Partial Index

Significance of Modifications of Thyroids in Presence of Tumors, Especially Cancer. G. Lelli.—p. 377.
*Atherosclerosis in Celiac Artery and Its Branches. E. Ferrari.—p. 424.

Atherosclerosis in Celiac Artery.—Ferrari discusses the pathogenic relations between vascular lesions of atherosclerosis and the local mechanical conditions of circulation. He made anatomic studies on the celiac artery and its branches (left gastric, hepatic and splenic) in fifty cases of atherosclerosis. He found that (1) the gastric artery is not involved by the disease and (2) the splenic artery is involved earlier and more acutely than the celiac and hepatic arteries. The main lesions are fibrosis of the media and degeneration up to atheroma of the intima. Intimal degeneration seems to be secondary to the medial lesions. Calcification of the media and tortuosity of the arteriosclerotic artery take place only in the splenic artery. Early in the development of the disease atherosclerosis involves only the peripheral segments of the splenic artery. Later on the condition progresses to the central segments of the splenic artery and to the celiac and hepatic arteries. In order of frequency the acuteness of the condition is first for the splenic then for the celiac and lastly for the hepatic artery. According to the author, the different behavior of the arteries for the development of the disease depends on anatomic and functional relations of the arteries with the given supplied territories. In pathologic conditions the increased resistance to circulation may result in the development of atherosclerosis if secondary factors, such as toxic, infectious, endocrine or constitutional, exist.

Brasil-Medico, Rio de Janeiro

53: 305-324 (Feb. 25) 1939. Partial Index

*Sulfanilamide in Venereal Lymphogranuloma. D. Peryassu.—p. 309.

Sulfanilamide in Venereal Lymphogranuloma.—Peryassu states that the classic treatments (physical, chemical or surgical) of venereal lymphogranuloma sometimes control the disease but not always. The author resorted to the administration of sulfanilamide in a group of patients, the number not being specified by the author. All had a positive Frei test and the disease was in an advanced stage. Four cases are reported in detail. He found that a complete sulfanilamide treatment induces recovery. Incomplete treatments are followed by recurrences. The author established the following types of treatment: (1) treatment by sulfanilamide alone, (2) sulfanilamide and roentgen treatments and (3) sulfanilamide and iodine or antimony treatments. In all three types the sulfanilamide treatment consists in administration of six daily tablets of the drug (rubiazol) up to a total of 180 tablets for each series. The entire treatment consists of two or three series with intervals of fifteen days of rest between the series, when no drugs of any kind were given. Treatment with sulfanilamide alone is indicated early in the development of venereal lymphogranuloma and before the appearance of fistula. The roentgen treatment consists in local roentgen irradiations, with the technic commonly used for ganglion roentgen therapy, in the course of the sulfanilamide treatment, the number of irradiations being decided by the evolution of the disease. It is indicated in advanced forms of venereal lymphogranuloma with the presence of many large fluctuating or nonfluctuating ganglions but no fistula. If fistulas exist the treatment consists in the administration of iodine or antimony preparations at regular intervals with the sulfanilamide treatment, namely during the fifteen days of rest between the sulfanilamide treatments. Sulfanilamide is well tolerated by the patients. In all cases the symptoms are relieved early in the course of the treatment. Reduction of the size of the ganglions up to complete disappearance and healing of the fistula take place as the treatment advances.

Archiv für Gynäkologie, Berlin

168: 351-544 (Feb. 24) 1939. Partial Index

Elimination of Porphyrin in Urine During Hyperemesis Gravidarum, Eclampsia and Their Preliminary Stages. H. Mittelstrass.—p. 351.
Histologic Examination of Douglas's Punctates and Their Significance for Tumor Diagnosis. K. Schmidt.—p. 359.
Apparent Pregnancy: Evaluation of Postive Aschheim-Zondek Reactions Without Demonstrable Pregnancy. H. Limburg.—p. 368.
Occurrence of Fat Tissues in Uterine Tumors. H. Greve.—p. 380.
Results of Clinical Management of Delivery in Cases of Pelvic Presentation. J. Erbslöh.—p. 392.
Aspects of Vernix Caseosa. R. Schmid.—p. 445.
*Metastases of Carcinoma in Ovary with Especial Consideration of So-Called Krukenberg Tumors. W. Uhlmann.—p. 468.

Carcinoma Metastases in Ovary: Krukenberg Tumor.—Uhlmann says that opinions are still divided regarding the nature and pathogenesis of Krukenberg tumors of the ovaries. Krukenberg considered them as primary ovarian tumors which differed from other neoplasms of the ovary by their peculiar histologic structure. The most characteristic feature of the microscopic picture of these tumors is the "signet-ring" cells, in which the nucleus is placed far to the side, as a result of the mucous transformation of the protoplasm of the epithelial cells. These cells give a positive mucicarmine reaction. Moreover, there is a considerable proliferation of the ovarian connective tissue which simulates the aspects of a fibrosarcoma

and, within this tissue, the signet-ring cells appear either isolated or in groups. Krukenberg's opinion that these tumors were of a primary nature was accepted by a number of investigators, but today many observers believe that Krukenberg's tumors represent metastases of primary tumors of the intestinal tract. In this paper Uhlmann presents a statistical review of fifty-two cases of ovarian carcinoma, which were examined at the pathologic institute of the University of Erlangen. In twenty-two of the cases the ovarian tumors were definitely of the Krukenberg type. In eleven other cases the tumors were probably also of this type, although the characteristic formation of mucus was absent. Among the twenty-two cases in which the ovarian tumors were definitely of the Krukenberg type there were fifteen in which the Krukenberg tumors represented metastases of a primary tumor in the gastrointestinal tract. However, a primary carcinoma of the gallbladder was detected in none of these cases. Of the remaining seven cases, only one can be designated as a primary tumor on the basis of postmortem studies. In the other six cases clarification was impossible, because no postmortem examination was made. In six cases the appearance of the Krukenberg tumors was preceded by gastric resection on account of carcinoma of the stomach. In five instances the primary tumor was detected at the time of operation. The average age of all women with ovarian carcinoma was 46.7 years, that of those with Krukenberg tumors 45.2 years. Most of the women were of the age group between 41 and 50, but there were also some between the ages of 21 and 30. Signs of masculation were observed in only one of the women with Krukenberg tumors. In the last part of his report the author relates a case that he observed recently. This case is noteworthy because the tumor seems to be of a primary nature. Thus, of a total number of twenty-three cases of Krukenberg tumor, two may be regarded as having developed in the ovary as primary tumors, a possibility that is doubted by some investigators.

Deutsche medizinische Wochenschrift, Leipzig

65: 281-320 (Feb. 24) 1939. Partial Index

*Medical Problems in Substratosphere. H. Strughold.—p. 281.
Change in Diet as Therapeutic Factor. W. von Drigalski.—p. 285.
Symptomatic Sprue in Gastrocolic Fistula. W. Mohr.—p. 287.
Hypophysis and Carcinoma. Wilhelmine Rodewald.—p. 290.

Medical Problems in Substratosphere. — Strughold describes the effect of altitude during an ascent to 8,000 or 9,000 meters. He bases his report on the observations he made on his collaborators, with the aid of reflex physiology, pointing out that the tendon reflexes, for instance the patellar reflex, are an excellent indicator of the physiologic changes in the organism which take place under the influence of the high altitude. By constantly recording the reflexes during an ascent, it is found that up to an altitude of 2,500 meters the reflexes remain unchanged. After that they become weakened, but at an altitude of 5,000 meters their reduction changes into an intensification. This hyperreflexia increases wavelike with higher altitudes and finally leads to the so-called altitude convulsions. The hyporeflexia is a compensatory reaction to the beginning oxygen deficiency, for it sets in simultaneously with the compensatory mechanisms of the circulation and of the respiration. Its onset signifies the "reaction threshold." The intensification of the reflexes indicates that the compensatory measures become insufficient and that now a real oxygen hunger exists. Thus the onset of the intensification of the reflexes may be designated as the "disturbance threshold." When the convulsions begin, even the central regulation of the reflexes is impaired and this stage of the high altitude action is designated as the "critical threshold," because at this point life is threatened and oxygen must be given at once. By the administration of oxygen the convulsions can be overcome. In experiments on animals it has been demonstrated that there is a further stage in high altitude action, the so-called lethal threshold, where the convulsions change into paralysis. The author admits that in practice the problem of high altitude flying seems to have been solved by supplying oxygen when certain altitudes have been reached. However, under certain conditions it may become necessary for the pilot to separate himself from the oxygen apparatus and in this connection the question of the "time reserve" arises, that is, the length of time that elapses between the cessation of oxygen respiration and the "disturbance threshold." Studies on this "time reserve" revealed to the author that at altitudes of 8,000 or 9,000 meters this reserve of time extends over only a few minutes if the person is at rest; it is reduced to one half if the person is exerting energy in work. In many instances, however, the time reserve must be estimated in seconds rather than in minutes and the author thinks that in such emergencies the pilot should at once descend from the substratospheric altitudes toward the physiologic atmosphere, that is to 3,000 or 4,000 meters.

Medizinische Klinik, Berlin

35: 301-336 (March 10) 1939. Partial Index

Urgent Tracheotomy. M. Ernst.—p. 301.
Treatment of Open Injuries of Knee Joint. Uebermuth.—p. 307.
*Congenital Clubfoot. K. Gaugele.—p. 310.
Treatment of Varicose Syndrome. J. Wirth.—p. 312.
Gonorrhea in Man in Light of New Chemotherapy. A. Glingar.—p. 315.

Congenital Clubfoot.—Following brief remarks about the etiology and the various forms of congenital clubfoot, Gaugele gives his attention to the therapy. He first outlines the treatment that was in use from about the beginning of the century to the middle twenties. It generally consisted in exercise and massage during the first six months and after that in redressement often with plaster of paris casts; later orthopedic appliances and orthopedic shoes were employed. This treatment often extended over many years and the results were not always satisfactory. More recently, demands were heard for an early treatment. The method of early treatment with which the author obtained favorable results for the last ten years was first employed by Spitzy. The author begins the treatment on the seventh or eighth day, at the latest on the fourteenth day after birth. It consists in applying strips of adhesive tape that are from 6 to 8 cm. wide. In case of the right foot, the bandage is begun on the external edge of the dorsum of the foot, goes toward the internal edge, over the sole toward the outer edge, then upward toward the thigh (the leg being bent in the knee), around the thigh and ends at the internal side of the leg. An illustration clarifies the application of the bandage. The correct adjustment of this bandage requires a certain amount of practice. During the first eight days the foot must be inspected frequently by a nurse and at least twice a day by the physician. At least during the first three weeks of treatment the infant must remain in the hospital; after that the treatment may be ambulatory. The results are excellent. After from six to eight weeks of treatment the foot is usually normal. After that the child wears braces during the greatest part of the day and night, but during the day they are occasionally removed and exercises are made by the mother. In difficult cases the wearing of braces may have to be alternated with the application of adhesive bandages. The author deplores that not all cases of congenital clubfoot are subjected to this early treatment and that consequently interventions may be necessary on older children and even on adults. He recommends an operation which combines tendon transplantation with wedge osteotomy from the lateral part of the foot.

Münchener medizinische Wochenschrift, Munich

86: 241-280 (Feb. 17) 1939. Partial Index

Acute Yellow Atrophy of Liver and Hepatic Cirrhosis. P. Huebschmann.—p. 241.
Total Thyroidectomy in Patients with Cardiac and Circulatory Disease. N. von Jagić and O. von Zimmermann.—p. 245.
*Hematologic Diagnosis of Hodgkin's Disease. F. Velasco Montes.—p. 255.
Secondary Necrosis of Head of Femur Following Traumatic Dislocation of Hip Joint in Boy Aged 14. H.-H. Mutschler.—p. 258.

Hematologic Diagnosis of Hodgkin's Disease.—Velasco Montes points out that, in view of the clinical polymorphism of Hodgkin's disease, its diagnosis often requires special examinations. The blood picture is extremely multiform not only as regards the different cases but also in the same patient. Numerous investigators attempt to diagnose Hodgkin's disease by means of sternal puncture, but this involves considerable difficulties. Moreover, it has been found that the bone marrow is involved in only about half of the cases of Hodgkin's disease.

At any rate the author thinks that sternal puncture will never assume the significance of the adenopuncture in the diagnosis of Hodgkin's disease. He regards the glandular puncture as the method of choice and he employs it regularly in doubtful cases. The diseased glands are usually characterized by cellular polymorphism or by the presence of a large number of cells of an endothelioid nature, which seem to be related to, or perhaps are preliminary stages of, Sternberg's cells. On the basis of the predominance of certain types of cells in the adenograms, for instance, of neutrophils, eosinophils or reticular cells, classifications have been attempted. However, the author thinks that such classifications are arbitrary and that the various types are merely variants of the fundamental polymorphism. To be sure, a certain amount of experience is necessary to recognize among the large number of cells those which are decisive for the diagnosis, and the author suggests that this is probably the reason why this valuable method of examination is used so little by others than experienced hematologists. An additional advantage of adenopuncture is that patients never object to it as they do to exploratory excision. Moreover, the glandular puncture can be repeated whenever it seems necessary, for instance, to evaluate the efficacy of a treatment; it does not involve the danger of a flare-up or of reactivation of the disease, as is sometimes the case in exploratory excision. After the glands have been treated with roentgen rays, the interpretation of their cellular aspects is extremely difficult. This applies to the adenogram as well as to the exploratory excision. To be sure, there are also cases in which even in the absence of roentgen irradiation the diagnosis cannot be made on the basis of glandular examination. Cases have been described in which only splenic puncture made the diagnosis possible. Occasionally, access to the diseased glands is difficult or their severe sclerosis makes an adenopuncture impossible. Moreover, purely splenic forms of Hodgkin's disease have been observed. The splenogram of Hodgkin's disease discloses Sternberg's cells.

Wiener klinische Wochenschrift, Vienna

52: 129-152 (Feb. 10) 1939. Partial Index

Connective Tissue Structure and Elasticity. H. Homma.—p. 139.
*Differential Diagnostic Difficulties in Pulmonary Actinomycosis. W. Breu and H. Seyfried.—p. 142.

Differential Diagnostic Difficulties in Actinomycosis.—According to Breu and Seyfried the diagnosis of pulmonary actinomycosis is usually made late. Whereas other pulmonary disorders are characterized by signs that can be detected by percussion, auscultation and roentgenography, these methods of examination fail in cases of actinomycosis. The aspects of actinomycosis of the lung differ greatly. Moreover, the histologic and bacteriologic examinations and the animal experiments fail occasionally so that their negative outcome does not definitely exclude actinomycosis. Even if Actinomyces is detected at the site of the disease process, this is not necessarily a proof of an actinomycosis; this was emphasized by Wassmund in actinomycosis of the jaw. The authors describe a case in which the diagnosis proved extremely difficult and was finally decided in the course of the necropsy. The patient presented some aspects of diabetic coma; cerebral symptoms suggested a brain tumor, and these cerebral symptoms together with a shrinking process in the right lung finally led to the diagnosis of bronchiectasis with metastatic cerebral abscesses. This diagnosis was at first corroborated by the necropsy, but several days later the microscopic examination disclosed Actinomyces in the walls of the bronchiectasis and in the pus of the cerebral pus. When this was discovered, some characteristics of pulmonary actinomycosis became evident in the clinical aspects. The described case as well as other reports exhibit severe shrinkage of the thorax and the pleura, distortion of the heart and discrepancies between the severe changes and the apparently benign character of the process. The localization of the process in the right upper lobe also could have been utilized in the differential diagnosis. Metastases in the brain likewise are no exception in actinomycosis, for twenty-one such cases have been collected from the literature. The coarse rales over the lungs seem significant, because the authors observed this symptom in all of their cases of pulmonary actinomycosis. Following the review of three other cases, the authors discuss the treatment. They think that besides the various forms of serotherapy (convalescent serum, vaccines and so on) the combination of iodine and roentgen therapy is most common and most effective.

Zeitschrift für urologische Chirurgie, Berlin

44: 401-499 (Feb. 15) 1939

Progress in Recognition of Renal Disorders Curable by Surgery and Differentiation from Functionally Conditioned Urologic Disorders. K. Werwath.—p. 401.
Nontuberculous Strictures of Ureter. E. Dózsa.—p. 432.
Congenital Stenoses of Urethra. K. R. Busch.—p. 460.
*Treatment of Uremia Developing After Surgical Disease of Kidney with Especial Consideration of Hepatic Function. A. Babics.—p. 465.
Elimination Urography in Light of Gynecology. G. Kulitzy and J. Molnár.—p. 476.
New Surgical Method for Cure of Phimosis. K. Haszler.—p. 490.

Hepatic Function in Uremia.—Babics shows that true uremia is not a primary disorder but a syndrome resulting from intoxication of the organism and that consequently its treatment is similar to that of intoxications. Three types of treatment are possible: one restricts the foods, the final products of which exert toxic action; a second method aims at the prompt removal of the toxic substances from the organism, and the third method aims at the detoxication of the poisonous substances by chemical decomposition or neutralization. The condition of the kidney plays an important part in the prognosis of uremia. Moreover, the prognosis must take into consideration that a surgical intervention, even one outside the renal apparatus, taxes the whole organism and especially the liver. It was determined at the author's clinic that during the severe stages of uremia not only the kidney is impaired but also the hepatic function. This was demonstrated by means of the bengal rose test of Fiessinger and Walter. This test of the hepatic function has the advantage that it is entirely independent of renal activity. Since it had been observed on patients with hepatic disorders that the subcutaneous or intramuscular injection of a lipase preparation produced great improvement, it was decided to administer the lipase preparation also in patients with uremia. The author reports the clinical histories of several patients in whom these injections exerted a beneficial effect. Summarizing his observations he says that the liver plays an important part in the pathogenesis of uremia. Some cases of uremia can be successfully counteracted by improving the hepatic function; this is especially possible in those cases in which the xanthoprotein reaction indicates that the products of decomposition that are toxic for the liver have not yet reached extremely high values. If it is considered that a large group of urologic disorders, hypertrophy of the prostate, for instance, concerns aged persons, in whom defective hepatic function is as such quite frequent, it seems advisable to stimulate the hepatic function even in the absence of signs of uremia, whenever it is likely that an instrumental or surgical intervention will place an added burden on the organism and especially the renal activity. The author stresses that the lipase preparation which he used for the stimulation of the hepatic activity produced no undesirable effects.

Sovetskiy Vrachebnyy Zhurnal, Leningrad

961-1200 (Supplement) 1939. Partial Index

*Intestinal Tuberculosis. A. Ya. Tsigelnik.—p. 977.
Electrosurgery in Oncology. S. A. Kholdin.—p. 999.
Indications for Surgical Therapy in Cancer of Neck of Uterus. A. T. Serebrov.—p. 1009.
Early Diagnosis and Prophylaxis of Pigmented Neoplasms of Skin. A. Shanin.—p. 1013.
Cardiac Asthma. B. A. Zhitnikov.—p. 1026.
*Comparative Value of Demyanovich's Therapy of Scabies and Its Modification. V. N. Levitan.—p. 1055.

Intestinal Tuberculosis.—Systematic x-ray examination together with consideration of the complaints of the patients and the blood picture make possible, according to Tsigelnik, early diagnosis of intestinal tuberculosis. This complication may develop as early as one year after the onset of symptoms of pulmonary tuberculosis. While the usual mode of infection is the swallowing of the tubercle bacilli, the hematogenous mode of infection may occur. In the author's material it

amounted to 9.3 per cent. Symptoms may be entirely absent, as was the case in six of fifty cases later examined post mortem by the author. The incidence of intestinal tuberculosis is more to be expected in cases of a disseminated process in the lungs with cavitation and bacilli in the sputum. Suggestive symptoms are pain and tenderness, particularly when in the ileocecal region, nausea, loss of appetite, vomiting and constipation alternating with diarrhea. Occult blood in the feces was found in 18 per cent of the cases. The author stresses the importance of roentgenologic study with the aid of a contrast meal administered by mouth and by rectum. In his material of 150 cases it was positive in 80 per cent. Characteristic observations are the presence of horizontal levels in the small intestine, due to the loss of tone of the large intestine which results from the action of tuberculous toxins on the neuromuscular elements of the latter, and spastic states of the cecum and the ascending colon. Next to roentgenologic observations, the author stresses the development of hypochromic anemia. The hypochromia is the result of toxemia rather than of occult bleeding. Of 150 patients 120 had a hemoglobin below 60 per cent, while only twenty-seven had blood in the feces. The author feels that intestinal tuberculosis is not necessarily a hopeless condition. He sees in vitamin C an important addition to the dietetic treatment and is enthusiastic about the pneumoperitoneum therapy. Of fifty patients subjected to this treatment thirty-two obtained a remission which lasted twelve months. The results, he believes, are due to the antispastic effect of gas on the neuromuscular elements of the diseased intestine. The prophylaxis of intestinal tuberculosis consists in the correction of habitual constipation in cases of pulmonary tuberculosis, of instructing patients not to swallow their sputum, of collapse therapy in order to render their sputum bacillus free, and the roentgenologic study of the intestinal tract in cases of pulmonary tuberculosis.

Demyanovich's Therapy of Scabies.—According to Levitan, Demyanovich in 1933 proposed the following rapid method of treating scabies: The patient rubs a 40 per cent solution of thiosulfate into his skin for fifteen minutes. Ten minutes later the skin is covered with salt crystals in order to dry it. This is followed by another period of a fifteen minute rub with a 5 per cent solution of hydrochloric acid. The chemical reaction resulting between the hydrochloric acid and the thiosulfate releases a number of acaricidic substances such as sulfurous acid, sulfur dioxide and sulfur, which in their nascent state are fatal to the itch mite. This reaction is accompanied by the freeing of sulfurous gas characterized by an unpleasant odor and irritating effect on the upper respiratory passages of the patients and the attending personnel. The procedure is repeated fifteen minutes later, the complete treatment occupying about one hour and forty-five minutes. On the basis of 10,017 cases of scabies in which this method of treatment was used at the dermatologic clinic of the Leningrad Pediatric Institute, the author concludes that, while the treatment is simple, clean and economical, it does not cure all of the patients in one treatment. In his material this was accomplished in 4,189 cases (41.2 per cent). Longstanding cases and those complicated with various dermatoses required from two to five treatments at intervals of from six to seven days. The modification of the method consisted of a preliminary shower bath with green soap and brush, and disinfection of the patients' clothes. The modification resulted in doubling the number of cures after one treatment in the next 4,000 patients.

Maandschrift voor Kindergeneeskunde, Leyden

8: 173-210 (Feb.) 1939

"Sclerodermia en Bandes" and Parathyroidectomy. W. Naessens.—p. 173.
Infectious Icterus Followed by Hepatic Cirrhosis. S. C. Meyer.—p. 179.
Dermatorrhexis with Dermatochalasis and Arthrochalasis (Danlos-Ehlers Syndrome). J. van Aardenne.—p. 187.
*Acute Anterior Poliomyelitis: Survey Over Cases Treated in Leyden in 1938. H. Broekema.—p. 193.
Symptoms of Conversion After Psychic Trauma: Case with Rapid Recovery. A. Thierry.—p. 207.

Acute Anterior Poliomyelitis.—Broekema surveys more than seventy cases of poliomyelitis which were treated at the children's clinic of the university of Leyden in the course of the epidemic of 1938. Convulsions developed in only two of the seventy cases. The dromedary type of fever curve was observed in 10 per cent of the cases. Four of the patients had had certain contact with other patients who had poliomyelitis. Two children were admitted on the basis of a family history of poliomyelitis, that is, a brother or sister had poliomyelitis; both of these patients had a nonparalytic form of poliomyelitis. The fact that a large number of patients had family members at home ill with disorders resembling poliomyelitis suggests a large number of abortive cases. Of the seventy hospitalized patients, thirteen remained free from paralytic symptoms. Of the fifty-seven with paralysis, nine succumbed several hours or days after hospitalization. All except one of the children, who died, were 3 years or less of age and in all of them the respiratory apparatus was involved. The therapeutic methods employed were convalescent serum, the antipoliomyelitis serum of Pettit, blood transfusion, methenamine and intralumbar injection of vitamin B_1. A table, which lists eighteen cases that were treated with vitamin B_1 and fourteen that were treated without this vitamin, indicates that in the first group the therapeutic results were better than in the second group.

Acta Tuberculosea Scandinavica, Copenhagen

13: 1-192 (Nos. 1-2) 1939

Mortality Observed Among Cases of Pulmonary Tuberculosis. Julie E. Backer.—p. 1.
*Role of Vitamin C in Pathogenesis of Tuberculosis in Guinea Pigs: IV. Effect of l-Ascorbic Acid on Tuberculin Reaction in Tuberculous Animals. K. E. Birkhaug.—p. 45.
*Id.: V. Degree of Tuberculosis in Tuberculous Animals Treated with l-Ascorbic Acid and in Controls. K. E. Birkhaug.—p. 52.
Recent Studies Bearing on Tuberculous Infection and Reinfection. H. C. Sweany.—p. 67.
Dogs and Cats as Source of Tuberculous Infection in Human Subjects. A. Hjärre.—p. 103.
Transmission of Tuberculosis Between Man and Certain Domestic Animals, Especially Dogs and Cats. C. W. Herlitz.—p. 125.
Allergy and Immunity (Iathergy) in Experimental Tuberculosis: III. Degree of Tuberculosis in BCG-Immunized Guinea Pigs Reinfected in the Allergic and Desensitized (Iathergic) State. K. Birkhaug.—p. 163.

Vitamin C and Tuberculin Reaction.—Birkhaug reports the effect of ascorbic acid on the intracutaneous tuberculin reaction in tuberculous guinea pigs. Following the subcutaneous inoculation with approximately 538 viable bovine tubercle bacilli, twenty-four guinea pigs were maintained on a normal diet, while half of the group received in addition 10 mg. of ascorbic acid by mouth daily until all the animals were killed sixty-four days after inoculation. The daily titration of the vitamin C excreted in the urine informed the author that the animals treated with ascorbic acid were continuously kept in a state of hypervitaminosis C and that the controls developed a progressive hypovitaminosis C. Subsequent postmortem titration of the vitamin C content of the adrenals confirmed the direct correlation with the urinary content. The author describes the outcome of the tuberculin reactions on the twenty-fourth, fifty-first and sixty-second day after inoculation. He reaches the conclusion that the daily oral administration of crystalline vitamin C significantly inhibits the tuberculin reaction in tuberculous guinea pigs. The degree of inhibition of the tuberculin reaction is definitely correlated with the urinary excretion and adrenal content of vitamin C in the tuberculous animal.

Tuberculosis in Animals Treated with Ascorbic Acid.—Birkhaug discusses the tuberculous lesions that were observed in tuberculous animals that were treated with ascorbic acid and in the controls that did not receive ascorbic acid. He found that C hypervitaminosis, induced by the daily oral administration of 10 mg. of l-ascorbic acid, caused a significant increase in body weight and reduction in the tuberculous lesions of guinea pigs injected subcutaneously with approximately 500 viable bovine tubercle bacilli and killed sixty-four days after inoculation. Microscopic examination revealed less caseonecrotic lesions, more collagenous tissue within and around the tuberculous centers and less dispersion of tubercle bacilli in animals with C hypervitaminosis than was observed in the controls.